

**KNOWLEDGE, ATTITUDE AND PRACTICES OF CARETAKERS REGARDING
IMMUNIZATION UPTAKE IN KATIKAMWE PARISH,
BUSHENYI DISTRICT**

**TUMUHAIRWE DATIVAH
2013-BNS-TU-010**

**AN UNDERGRADUATE RESEARCH REPORT SUBMITTED TO THE SCHOOL OF
NURSING IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR
THE AWARD OF A BACHELOR'S DEGREE IN NURSING OF
INTERNATIONAL HEALTH SCIENCES
UNIVERSITY**

NOVEMBER 2016

DECLARATION

I declare that the work contained in this research report on the “Knowledge, Attitude and Practices of caretakers regarding Immunization Uptake in Katikamwe Parish, Bushenyi District”, is mine and has never been presented before any academic institution for any award.

TUMUHAIRWE DATIVAH

Signature

Date.....

APPROVAL

This research titled, “Knowledge, Attitude and Practices of caretakers regarding Immunization Uptake in Katikamwe Parish, Bushenyi District”, has been under my supervision as the University supervisor and it is now ready for submission.

MS. LWANIRA CATHERINE

Signature

Date.....

DEDICATION

I dedicate this work to my husband Mr. Nabimara Charles my son Rutehenda Austin and daughters Ainembabazi Cynthia and Ainomugisha Cecilia

ACKNOWLEDGEMENT

I thank my husband Mr. Nabimara Charles and my brother Rev. Fr. Tumwiine Didas for all the financial and material support in my life and throughout this course. I also give a standing ovation to their parental love to me. They have really been a cordial compliment to my life.

I cordially thank my parents for all the financial, moral, parent and spiritual support and guidance that have shaped and guided me throughout my life.

I appreciate the District Health Officer of Bushenyi District for all the support extended to me on and off work.

I am appreciative to my supervisor Ms. Lwanira Catherine for her endless efforts and devotion that have always guided me in the execution of this research study. Her advice was both parental and educative which guided me positively in this study.

I am pleased about the cordial environment my friends and classmate who have provided me with which has led to my success. They have been very instrumental in the completion of this course. Their advice was very vital in overcoming the different challenges during the course of study.

I recognize all the authors whose works have been used to back up this study. Thank you a lot for the efforts. God bless you all.

TABLE OF CONTENTS

Declaration	i
Approval	ii
Dedication	iii
Acknowledgement	iv
Table of contents	v
List of figures	viii
List of tables	ix
Operational definitions	x
List of abbreviations	xi
Abstract	xii

CHAPTER ONE

1.0 Introduction	1
1.1 Background information	1
1.2 Problem statement	3
1.3 Objectives of the study	4
1.3.1 General objective	4
1.3 .2 Specific objectives	4
1.4 Research questions	4
1.5 Significance of the study	5
1.6 Conceptual framework of the study	6

CHAPTER TWO: LITERATURE REVIEW

2.0 Introduction	8
2.1 Knowledge of caretakers towards immunization uptake	8
2.2 Attitude of caretakers towards immunization uptake	12
2.3 Practice of caretakers towards immunization uptake	15

2.3.Place of delivery	17
-----------------------------	----

CHAPTER THREE: METHODOLOGY

3.0 Introduction.....	18
3.1 Study design.....	18
3.2 Sources of data.....	18
3.3 Study setting.....	18
3.4 Study population	19
3.4.2 Eligibility criteria.....	19
3.4.2.1 Inclusion criteria	19
3.4.2.2 Exclusion criteria	19
3.5 Sampling	19
3.5.1 Sample size determination	19
3.5.2 Sampling Technique	20
3.5.3 Sampling Procedure	20
3.6 Study variables.....	21
3.7 Data collection methods and tools	21
3.8 Quality control for field data.....	22
3.9 Data presentation and analysis.....	22
3.10 Plan for dissemination.....	23
3.11 Ethical consideration.....	23
3.12 Limitations of the study	23

CHAPTER FOUR: RESULTS

4.0 Introduction.....	24
4.1 Participant demographic characteristics	24
4.2 Knowledge of caretakers regarding immunization uptake	25
4.3 Caretakers' attitudes towards immunization uptake	26
4.4 Practices of caretaker's regarding immunization uptake	29

4.5 Bivariate analysis of social demographic, knowledge and attitude	31
 CHAPTER FIVE: DISCUSSION	
5.0 Introduction.....	35
5.1 Discussion of findings.....	35
5.1 Knowledge of caretaker’s on immunization uptake	35
5.2 Discussion of attitudes of the respondents towards immunization uptake	36
5.3 Discussion of practices of the caretakers on immunization uptake	38
5.4 Discussion of Bivariate analysis	40
 CHAPTER SIX: CONCLUSIONS AND RECOMMENDATIONS	
6.0 Introduction.....	45
6.1 Conclusion	45
6.2 Recommendations.....	46
6.4 Areas of further research.....	48
 REFERENCES	 49
 APPENDIX I: Consent Form.....	 52
APPENDIX II: Interview Schedule	53
APPENDIX III: Map Showing Location of Katikamwe Parish	58
APPENDIX IV: Introductory Letter	59
APPENDIX V: Correspondence Letter	60

LIST OF FIGURES

Figure 1: Conceptual frame work of the study	6
Figure 2: Showing caretakers knowledge of the time a child should get the first vaccine.....	25
Figure 3: Showing caretakers child immunization uptake.....	30
Figure 4: Showing caretakers who were sensitized about immunization	30

LIST OF TABLES

Table 1: Social demographic characteristics of the study participants	24
Table 2: Participant's knowledge about child hood immunization	26
Table 3: Caretaker's attitudes towards immunization uptake	28
Table 4: Correlation between knowledge and attitudes towards immunization uptake	29
Table 5: Caretaker's responses regarding immunization uptake	31
Table 6: Bivariate analysis of social demographic, knowledge and attitude	32
Table 7: Correlation between knowledge and practices on immunization uptake	33
Table 8: Correlation between perception and practices towards immunization uptake	34

OPERATIONAL DEFINITIONS

Attitudes	:	This is the perception or belief an individual has about something.
Immunization	:	This is the process of administering vaccines to an individual with an aim of preventing disease infection
Immunization card	:	This is a document that shows when immunization was taken and for what disease
Immunization schedule:		This is the work plan when and what vaccines to be given
Knowledge	:	This is the level of awareness an individual has about something at a given time
Practices	:	These are observable actions of somebody in response to the prevailing circumstances.
Vaccination knowledge:		Refers to the understanding of an individual about vaccination
Vaccine	:	A preparation containing weakened or dead microbes of the kind that cause a disease, administered to stimulate the immune system to produce antibodies against that disease

LIST OF ABBREVIATIONS

DPT	:	Diphtheria, Pertusis and Tetanus
EPI	:	Expanded Programme on Immunization
KAP	:	Knowledge Attitude and Practice
OPV	:	Oral Polio Vaccine
PCV	:	Pneumococcal Conjugate Vaccine (PCV)
WHO	:	World Health Organization

ABSTRACT

Background: Immunization is a proven tool for controlling and eliminating life-threatening infectious diseases and has been estimated to save more than three million lives in 2015 (WHO, 2015). The study assessed the knowledge, attitude and practices of caretakers towards immunization uptake in Katikamwe parish, Kyabugimbi trading center and Kyamutiganzi Villages, Bushenyi District.

Method: A descriptive cross sectional and quantitative study design was used with a sample size of 195 respondents who were caretakers selected by simple random sampling. Data was collected through interviews.

Results: Regarding knowledge on immunization uptake, all respondents had ever heard about immunization from health workers and could correctly define it. 175(90%) thought training about immunization was necessary, routine immunization prevented children from some infectious diseases, boosted a child's immunity 111(56.9%), were aware that multi-doses of the same vaccine given at intervals boosted immunity, knew that most immunizable diseases occurred before the first birth day. However they had inadequate facts about immunization, where; 92 (47.2%) did not know the right number of times a child should be immunized and when to receive the first vaccine, did not know that lack of immunization could cause serious sickness to children and were unaware of the immunizable diseases.

Had generally poor attitudes where 82 (42.1%) never perceived it necessary to always seek medical care a child falls sick, thought some vaccines were unsafe 78 (40%), associated immunization with side effects, believed that a child can be infected after immunization with the disease/s against which he/she was vaccinated, did not believe that completion of immunization schedule was important and believed that local herbs were better than modern medicine.

They also had poor practices where; they did not immunize on the exact date indicated for the next immunization schedule 102 (62.6%), started immunization late, never had immunization records, never immunized sick children and did not complete immunization despite getting information over the media. This provided ground for high prevalence of immunizable diseases in the area.

Conclusions and recommendations: Had fair awareness about immunization because apart from knowing what it is, 147 (75%) they did not know; when to immunize, the number of times to immunize and effect of immunization. They had poor attitude since they believed that vaccines were unsafe and a child could be infected with the disease he or she was immunized against. They also had poor practices where; they did not meet the immunization schedule, started immunization late, never had records while other never completed the schedule. The researcher suggests that; more education and sensitization about immunization should be done by all stakeholders; caretaker should always start immunization from birth, keep the records and complete the schedule.

CHAPTER ONE

1.0 Introduction

This chapter includes the background to the study, problem statement, study objectives, research questions, the significance of the study and the conceptual framework.

1.1 Background information

Immunization is a proven tool for controlling and eliminating life-threatening infectious diseases and is estimated to save more than three million lives in 2015 (WHO, 2015). However, millions of children still did not have access to basic immunization and die from diseases that could be prevented by available vaccines. Mother's knowledge, attitude and practices played a major role in achieving complete immunization before first birthday of the child. The objective of expanded program of immunization is to achieve 90% routine immunization coverage of all Expanded Program on Immunization (EPI) antigens with at least 80% coverage in every district by 2010 so that mortality and morbidity could be reduced from the seven EPI target diseases by immunizing children of the age 0-11 months and women of child bearing age (WHO, 2011).

It is one of the most cost-effective health investments, with proven strategies that make it accessible to even the most hard-to-reach and vulnerable populations (WHO, 2015). Universal immunization of children against eight vaccine-preventable diseases (tuberculosis, diphtheria, whooping cough (pertussis), tetanus, hepatitis B, respiratory diseases caused by *Haemophilus influenzae*, polio, and measles is crucial to reducing infant and child mortality (WHO, 2014). Consequently, childhood immunization remains a key channel for the attainment of the Social Development Goals 4 (SDG 4) of reducing child mortality by two-thirds within 2015.

Immunization currently averts an estimated two to three million deaths every year in all age groups from diphtheria, tetanus, pertussis (whooping cough), and measles. In 2013, an estimated 84% (112 million) of infants worldwide were vaccinated with three doses of diphtheria-tetanus-pertussis (DTP3) containing vaccine. Three regions - the Americas, Europe and Western Pacific maintained over 90% DTP3 immunization coverage, Europe and the Western Pacific reaching 96%. Number of countries reaching 80% or more immunization coverage with DTP3 containing vaccine in 2013: 160 countries. Number of countries reaching 90% or more immunization coverage with DTP3 containing vaccine in 2013: 129 countries, and 119 sustaining it for 3 years. Fifty six of the 129 countries are reporting having reached 80% in all of their districts.

Over 24,000 children die of vaccine-preventable diseases every day around the world. This was equivalent to 1 child died every 3.6 seconds, 16-17 children died every minute, and about 9 million children died every year. Of these deaths in 2008, a bigger proportion occurred in sub-Saharan Africa (4.4 million) and South Asia (2.8 million) compared to Latin America, the Caribbean (0.2 million), and industrialized countries (0.1 million) (Birhanu, et al., 2016).

In 2009, the World Health Organization (WHO) estimated that if global vaccine coverage increased to 90% by 2015, then approximately two million deaths of children under the age of five would be prevented. In the Sub-Saharan African country Uganda, vaccine coverage rates remained well below the WHO goal of 90%, with 82% of children receiving the measles vaccine and 78% completing the three dose series of pentavalent vaccine providing protection against diphtheria, tetanus, pertussis, hepatitis B, and Haemophilis influenza type B (DPT-HB-Hib) in 2013 (WHO, UNICEF: 2013). One recent study demonstrated that the western region of Uganda, had the lowest rate of complete childhood vaccination in the country (Vanasek et al, 2016).

WHO, (2015) reports, globally, 1 in 5 children still did not receive routine life-saving immunizations, and an estimated 1.5 million children still died each year of diseases that could be prevented by vaccines that already existed. In 2013, an estimated 84% (112 million) of infants worldwide were vaccinated with three doses of diphtheria-tetanus-pertussis (DTP3) containing vaccine (WHO, 2015).

During 2014, about 86% (115 million) of infants worldwide received 3 doses of diphtheria-tetanus-pertussis (DTP3) vaccine, protecting them against infectious diseases that could cause serious illness and disability or be fatal. By 2014, 129 countries had reached at least 90% coverage of DTP3 vaccine (WHO, 2015).

Three regions' the Americas, Europe and Western Pacific maintained over 90% DTP3 immunization coverage, Europe and the Western Pacific reaching 96%. There were 160 countries that reached 80% or more immunization coverage with DTP3 containing vaccine in 2013 and 129 reaching 90% or more immunization coverage with DTP3 containing vaccine in 2013 were 129 countries, and 119 sustaining it for 3 years. Fifty six of the 129 countries are reporting having reached 80% in all of their districts (World Bank, 2016).

In 2014, an estimated 18.7 million infants worldwide were not reached with routine immunization services such as DTP3 vaccine. More than 60% of these children live in 10 countries: the Democratic Republic of the Congo, Ethiopia, India, Indonesia, Iraq, Nigeria and Pakistan, the Philippines, Uganda and South Africa (HU, et al., 2016).

The Government of Uganda was committed to achieving the targets set out in the recently-launched National Development Plan (NDP, 2010-2015), many of which were in line with the MDGs to be achieved by 2015. In spite of these efforts, huge challenges still remained. The under-five and infant mortality rates were still high at 137 and 78 per 1,000 live births respectively (MOH, 2014).

As a developing country, health in Uganda lagged behind many other countries but was at par with the countries in the World Health Organization's (WHO) Africa region. As of 2015, the probability of a child died before five years was 5.5% (55 deaths for every 1,000 live births). Total health expenditure as a percentage of gross domestic product (GDP) was 9.8% in 2013 which all hampered immunization health education talks and the eventual uptake (World Bank, 2016).

1.2 Problem statement

Every child below 5 years should be immunized to maintain good health (WHO, 2015). However, in Katikamwe parish, a number of children missed immunization despite having immunization services available and accessible. Statistics from Katikamwe Health centre III showed that, immunization uptake ranged from 56-65% in 2014 (WHO, 2015). As a result there were increasing numbers of children suffering from immunizable diseases. These mainly included; (67%) pneumonia, (17%) measles, (0.8%) tetanus, and (0.003%) poliomyelitis. Local statistics showed that, 67% of children below 5 years were not fully immunized (Katikamwe Health Centre III, 2015). This predisposed children under 5 years to immunizable diseases especially measles, pneumonia, whooping cough and diphtheria.

Health reports from Katikamwe Health Centre III, indicated that, in 2013, immunizable disease visits accounted for 62% of total visits, in 2014 immunizable disease visits accounted for 67% of total visits and in 2014, immunizable disease visits accounted for 72% of total visits (Nabukwasi, 2016). This increased health care sector expenditure, infant mortality, family income constraints

due to loss of time for work and high expenditure on health, stagnant growth in children and co-morbidities.

The ministry of Health through Child Care Programme stepped up efforts of massive education and sensitization on importance of immunization, use of Village Health Team, dissemination of information on primary health care through different media channels and health talks to caretakers (MOH, 2015). Despite this, low immunization uptake was still persistent in the area and the reasons for this low uptake of immunization services in the area are not clearly defined. It is against this back ground that this study sought to assess the caretakers' knowledge, attitude and practice towards immunization uptake in Katikamwe Village, Bushenyi District so as to improve on immunization uptake.

1.3 Objectives of the study

1.3.1 General objective

To assess the knowledge, attitude and practices of caretakers regarding immunization uptake in Katikamwe Parish, Bushenyi District between 2010 and 2016 in order to improve infant health.

1.3.2 Specific objectives

The specific objectives included.

- To examine the knowledge of caretakers on immunization uptake in Katikamwe Parish between 2010 and 2016.
- To assess the attitude of caretakers towards immunization uptake in Katikamwe Parish between 2010 and 2016.
- To establish the practices of caretakers towards immunization uptake in Katikamwe Parish between 2010 and 2016.
- To study the relationship between knowledge, attitude and practices of caretakers about immunization uptake in Katikamwe Parish between 2010 and 2016.

1.4 Research questions

The study answered the following research questions;

- What is the knowledge of caretakers regarding immunization uptake in Katikamwe Parish between 2010 and 2016?

- What is the attitude of caretakers towards immunization uptake in Katikamwe Parish between 2010 and 2016?
- What are the practices of caretakers about immunization uptake in Katikamwe Parish between 2010 and 2016?
- What are the relationship between knowledge, attitude and practices of caretakers about immunization uptake in Katikamwe Parish between 2010 and 2016?

1.5 Significance of the study

The government/Ministry of Health will use research findings to initiate health workers to other ways of reaching out to mothers and caretakers and raise awareness about immunization uptake by putting it among the priorities while setting targets for the next financial year.

Results from this study may be used by policy makers to design appropriate policies that will help to strengthen the struggle to end the habit of missing immunization for example, the Campaign to kick Polio out of Uganda launched by UNFPA, UNICEF and UNEPI and partners in 2010.

Health organization will use findings while presenting at health conferences to compare various studies regarding hindering people from immunizing their children such that they solicit funds from different sponsors to facilitate the fight against this habit.

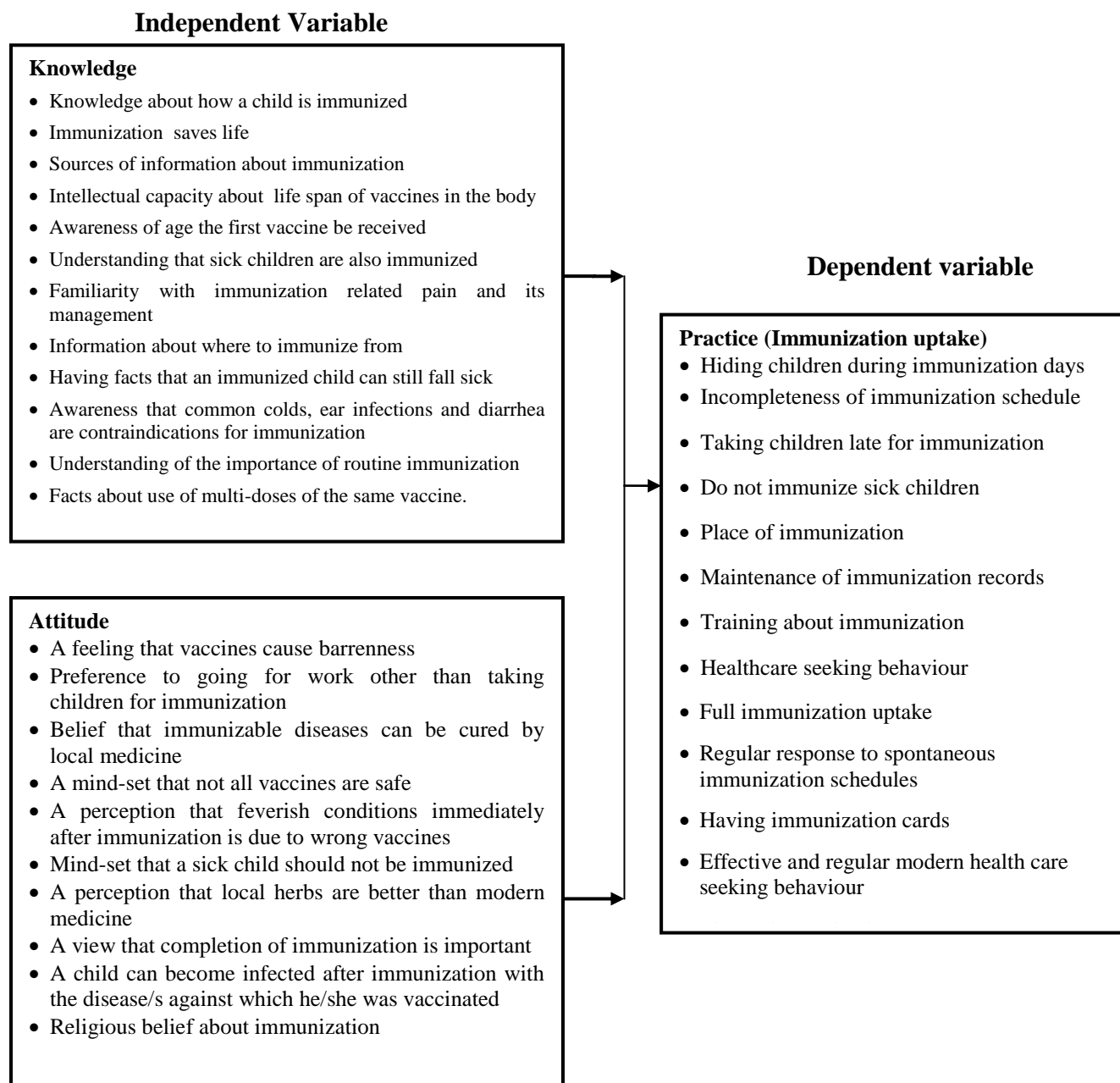
The study may help scholars who would wish to modify their theories concerning essential health care for children in the reproductive age.

Findings may be used as a source of reference by future researchers on related topics. The gaps that will be identified will be bridged by researcher.

The health workers Kyabugimbi Trading Centre village may use this information to identify and fill the gaps in sensitization about the measures put forward for immunization uptake.

1.6 Conceptual framework of the study

Figure 1: Conceptual frame work of the study



Sources: Developed by the researcher

The independent variables of the study were knowledge and attitude of the respondents of the study while the dependent variable was practice about immunization.

The indicators of knowledge were; immunization saves life, sources of information about immunization, intellectual capacity about life span of vaccines in the body, awareness of the immunizable age, understanding that sick children are also immunized, familiarity with

immunization related pain and its management, information about where to immunize from and having facts that an immunized child can still fall sick.

The indicators of attitude were; a feeling that vaccines cause barrenness, preference to going for work other than taking children for immunization, belief that immunizable diseases can be cured by local medicine, a mind-set that vaccines are poisonous and a perception that feverish conditions immediately after immunization is due to wrong vaccines.

The indicators of practice were; hiding children during immunization days, incompleteness of immunization schedule, taking children late for immunization; do not immunize sick children and choice of place of immunization.

CHAPTER TWO: LITERATURE REVIEW

2.0 Introduction

This chapter presents an extensive review of literature related to the study at hand. This information was reviewed in relation to the study specific objectives that included; 1) examining the knowledge of caretakers about immunization uptake, 2) to assess the attitude of caretakers towards immunization uptake and 3) to establish the practices of caretakers towards immunization uptake

2.1 Knowledge of caretakers towards immunization uptake

2.1.1 Availability of immunization vaccines

Njuma et al (2014) in a cross- sectional study on the predictors to parental knowledge about childhood immunization carried out in Cameroon, majority of the respondents had low knowledge regarding availability of immunization vaccines which could have limited their immunization uptake. This was because 81% of the parents/guardians were unaware of the availability of the Pneumococo Conjugate Vaccine (PCV-13). Mothers who were in poor economic conditions and settled relations did not know much about immunization of some diseases such as pneumonia disease as found in a study conducted in China and in Iraq (Al-lela, Bahari, Al-abbassi and Basher, 2011). This shows that parents who have adequate levels of knowledge regarding immunization also have positive practices towards immunization.

Similar observations have been reported earlier in Nigeria and Rajasthan-India. The higher levels of knowledge on the symptoms of pneumonia (69%) and on a preventive method (97%) found amongst parents/guardians which is similar to that reported in the study by Nnenna et al (2013). This may be attributed to the content of information given to them during antenatal visits. The fact that only 19% of the participants were aware of the availability of the PCV in our study stresses the need for an improvement in the quality of health information on pneumonia disease burden and prevention. However, this differs from the low rate (4%) of knowledge about Oral Polio Vaccine (OPV) reported in a Niger study, and the low rate of awareness (1%) that measles was vaccine-preventable in another study in Nigeria (Nnenna, et al, 2013).

2.1.2 Awareness about the types of vaccines

In another cross sectional study on introducing the pneumococcal conjugate vaccine (PCV) into Cameroon's Expanded Programme on Immunization (EPI), Njuma, (2011) found out that, 94% of the participating parents knew the types of vaccines their children had taken, while 6% had no knowledge. The current EPI vaccines which parents most often remembered that their children had taken or were due to take included: BCG, Polio, DTP (diphtheria, tetanus, and pertusis), measles and the yellow fever vaccines. This also applied to vitamin A supplements (Njuma, 2011).

2.1.3 Awareness of the names of vaccines

Nisar, Mirza, and Qadri, (2010) reported that, respondents had relative knowledge on the names of the vaccines that prevented diseases. Majority 75.6% mentioned polio vaccine, 40.4% tuberculosis, 20.2% whooping cough, 38.8% tetanus, 18.7% diphtheria, 33.5% measles and 15.4% were able to name Hepatitis B vaccine. About 72.7% women stated that immunization is important, 15.8% did not know about vaccine preventable diseases and 11.5% mothers considered that immunization is harmful for child (Nisar et al, 2010).

2.1.4 Source of information about immunization

Mabrouka, (2011) showed that, majority of the respondents got information regarding immunization from the right source. This is because out of the 200 studied mothers, 176 (88.2%) got the information from paramedical workers and had completely immunized their children. Television, posters and symposia, were other major sources of information while community leaders and doctors were found to be a lesser source (Mabrouka, 2011).

2.1.5 Knowledge about routine immunization

Currently, vaccination in the USA is recommended to all children from 6 months up to 19 years with particular emphasis on children under the age of 5 year or with chronic illnesses with Influenza vaccines (Smith, Woods and Marshall, 2009). Nearly 55% of the parents never knew that vaccination of children against seasonal influenza was important. Parents could be motivated to vaccinate their children if educated about the central role of children in transmitting the infection in households and communities, beside the health and economic burden of contracting influenza (Yousif et al, 2013).

2.1.6 Awareness about the role of routine immunization

In a study on mothers' knowledge and perception of adverse events following immunization in Enugu, South-East, Nigeria, Nnenna, Davidson and Babatunde, (2013) found out that, out of 731 mothers, majority of parents 672 (91.9%) knew the role of routine vaccination in protecting children from some infectious diseases and its complications such as death. A considerable number of 635 (86.9%) parents knew the timing of the first dose in vaccination schedule. Five hundred and sixty eight parents knew that the incidence of most diseases against which children are vaccinated occur during the first years of life. Less than half of the interviewees 304(41.6%) knew that administration of multiple doses of the same vaccine is important for child immunity.

High and positive levels of awareness and knowledge of participants in a study in Uganda by Nankabirwa, et al, (2010) attributed immunization uptake socio-economic and demographic factors. For instant, over seventy-eight percent of the parents/guardians sampled had obtained educational levels above primary school. Njuma, et al., (2014) in a study carried out in Cameroon noted that, this tool is an effect of free and compulsory primary education. Adult literacy rate were reportedly high in a previous survey with 67% for females and 81% for males (Nankabirwa, et al 2010).

2.1.7 Awareness of the dosage of vaccines

Mizan (2007) noted that, majority of respondents were unaware of the dosage of vaccines children were supposed to receive. Dosage of polio vaccine varied, ranging from 1.6% in respondents in Bauchi state who believe that children need only one dose of polio vaccine, to 23.3% of their counterparts in Kano state. In Yobe, 52.9% of parents were ignorant of the number of doses of polio vaccine required. A substantial proportion of respondents in all states wrongfully believed that administering more than four doses of polio vaccine is harmful to a child, ranging from 12.6% in Bauchi to 32.2% in Jigawa (Mizan, 2007).

2.1.8 Awareness about the number of vaccine doses

Bernsen et al (2011) in a study on knowledge, attitude and practice towards immunizations among mothers in a traditional city in the United Arab Emirates, revealed that, some respondents knew that most vaccines in the childhood immunization schedule required two or more doses for development of an adequate and persisting antibody response. Only 41.6% of the interviewees correctly knew the importance of administration of multi-doses of the same vaccine given at

intervals for child immunity. The consequence of this finding is that parents may think that only the first shot of the vaccine is sufficient to develop immunity and protect their children.

2.1.9 Having facts about the role of childhood immunization

Bernsen and colleagues still found out that more than 85% of the participants knew the role of childhood vaccination in prevention of life-threatening diseases. Majority could mention the major immunizable diseases that needed to be prevented if the child was to grow well. These were mentioned as; polio, measles, whooping cough and diphtheria (Bernsen et al, 2011).

2.1.10 Knowledge about the age to initiate vaccination

In another cross sectional study done in Paksitan by Siddiqi, Siddiqi, Nisar, and Khan, (2010) on mothers' knowledge about EPI and its relation with age-appropriate vaccination of infants in peri-urban Karachi, significant variations between mothers and fathers in knowledge were observed in the current study. Mothers almost in all cases used to accompany their children to immunization visits. Communication with healthcare providers may be responsible for the observed difference in mothers' knowledge compared to father's awareness. Significant differences were documented in knowledge and attitudes of parents who were living in the city compared to those who were residing outside the town. This may be explained by the difference in educational level or may be due to variation in the provided health services.

Nisar, et al (2010) stated that, regarding mothers had good knowledge about age at which immunization should be started. Out of the sample population, 98.6% reported at birth and about age at which immunization completed 56% said 9 month, 22% said 2 years and 22% reported 3 months. About 54% of women reported exact number of diseases against which EPI is scheduled.

2.1.11 Having facts that immunization and contraindications

Out of the participated parents, 61.7% did not know that common colds, ear infection, and diarrhea were not contraindications for vaccination. Delay of immunization based on misconceptions about contra-indications put an infant or child at risk (Asim, Malik, Yousaf, Gillani and Habib, 2012). Majority of the respondents immunized their children even if they suffered from some infections such as colds.

2.1.12 Having health education about immunization

Birhanu, Anteneh, Kibie and Jejaw, (2016) in a study on knowledge and attitude of mothers' about infant vaccination were not adequate. Only 55.0% of the respondents had good knowledge. Health education to promote knowledge based immunization practice is not enough (Birhanu et al, 2016)

2.1.13 Familiarity with immunization talks

Hu et al (2016) in a cross-sectional survey was conducted among migrant mothers by using a questionnaire, showed high knowledge about immunization among migrant mothers with 'fully immunized' children. These mothers were familiarity with immunization from the health talks they had received on their entrance. Mothers' age, maternal education level, number of children in household, latest continuous living time, and monthly household income per capita were significantly associated with the immunization KAP among migrant mothers (Hu et al, 2016).

2.2 Attitude of caretakers towards immunization uptake

2.2.1 Perception about the importance of immunization

Current recommendation in USA is to vaccinate all children from 6 months up to 19 years – with particular emphasis on children under the age of 5 year or with chronic illnesses with Influenza vaccines (Centre for Disease Control and Prevention, 2011). Nearly 45% of the parents knew that vaccination of children against seasonal influenza is important. Parents might be motivated to vaccinate their children if educated about the central role of children in transmitting the infection in households and communities, beside the health and economic burden of contracting influenza (Nnenna, Davidson and Babatunde, 2013).

2.2.2 Belief about the severity of immunizable diseases

Abdullahi et al (2014) in a study on knowledge, attitudes and practices on adolescent vaccination among parents, teachers and adolescents in Africa, show positive attitude towards immunization uptake regarding the severity of immunizable diseases. For example, HPV is viewed as dreadful disease thus increasing acceptance of HPV vaccines. However this is not the case with other vaccines such as DPT.

2.2.3 Awareness of the necessity of vaccination

Bernsen, et al, (2011) revealed that, majority of the fathers of immunizable children knew the reason about child immunization majority (86.6%) said that vaccination is necessary, while

13.4% reported the vaccination is not necessary. They also had a good health seeking behavior where they reported any sickness their children had.

2.2.4 Perception about the safety of vaccines

During mass immunization a large number of children can be reached who for a variety of reasons never get immunized through routine immunization or are unable to complete the recommended immunization schedule. Asiimwe et al (2006) noted that (73.9%) of the parents agreed with the importance vaccinating children during immunization campaigns. In Uganda parents/caretakers perceived vaccines used during mass immunization not to be safe either because they are expired or are deliberately contaminated with harmful agents intended to harm their children (Asiimwe, et al, 2006).

Zagminas et al (2007) assessed parents' knowledge on immunization and noted that most of the respondents can be characterized as having a positive opinion about vaccination, although 20-40% of respondents indicated insufficient knowledge on this issue. Greater concern about the safety of vaccines was expressed by older parents, residents of towns and highly educated individuals (Rogalska, Augustynowicz, Gzyl, and Stefanoff, 2010). Majority of them did not believe that the vaccines used to immunize the children were safe enough to fully be relied upon in the prevention of childhood dangerous diseases.

WHO, (2014) reported that, in many Sub Saharan Africa countries, there is a general negative attitude towards immunization uptake regarding the safety of the vaccines. There are wide misconceptions or fear of vaccinations ranging from the impression that vaccinations do not work to the concerns that vaccinations harm the child, or cause disease or other adverse event such as sterility. In certain countries, strong religious or traditional beliefs against vaccinations are reported, primarily from Pakistan, Nigeria, Benin, and in certain regions of India.

2.2.5 Role of culture

In Haiti parental attitude towards immunization uptake is highly influenced by culture. Use of traditional healers by mothers associated with lower child immunization uptake (WHO, 2014). Njuma, (2011) showed that, majority of the respondents believed that, if PCV-13 is to effectively reach every child, 56% mentioned via an increase in sensitization/campaigns.

2.2.6 Perception about the side effects of vaccination

Generally the administration of vaccines was associated with common local reactions like pain, swelling, and redness at the injection site. Systemic reactions, including fever, irritability, drowsiness, and rash, were also major thoughts about immunization (Papazoglou et al, 2013). More than half of the recruited parents strongly agreed that immunization associated with side effects. In another survey nearly 20% of the interviewed parents considered administration of vaccines being associated with undesirable effect like allergies and asthma. Parents did not have enough education about these side effects. Nnenna, Davidson and Babatunde, (2013) found that one-fifth (20%) of the recruited mothers would not continue immunization should their own child suffer any adverse reaction.

2.2.7 Behavior of health workers

In a study on immunization in developing countries, Hadler et al (2008) discovers negative attitude towards immunization uptake due to irritating statements from health care providers to mothers. Attitudes and behavior of health staff -- treating mothers in an unfriendly, disrespectful, or even abusive manner -- are frequently cited as discouraging children's vaccination. Health staff reportedly screamed at mothers who forgot the child's card, misses a scheduled vaccination appointment, or have a dirty, poorly dressed, or malnourished child. Mothers felt humiliated and thus get discouraged from returning as reported in Ethiopia, Zimbabwe, Niger, Kenya, Bangladesh, West Africa, Uganda, Benin, Nigeria and Syria, (WHO, 2015).

2.2.8 Immunization of a sick child

Mabrouka, (2011) revealed that, majority of the mothers had negative attitude towards immunizing a sick child. Majority 54% never immunized their children due to their health and sickness was the most common cause for cessation of immunization, followed by non availability of the vaccine, social reasons and forgetfulness (20.%, 10,5% and 5.5%) respectively. Only 10% of the mothers failed to report a reason for not immunizing their children.

2.2.9 Religion and immunization

Yousif et al (2013) in a study on parents' knowledge and attitudes on childhood immunization, Taif, Saudi Arabia noted that, out of parents 606 (82.9%) and 415 (56.8%) parents strongly agreed or agreed that child immunization is not prohibited in religion and the administration of vaccines is associated with side effects respectively. Nearly forty percent of parents were not

sure if the child becomes infected after immunization with the disease/s against which he/she was vaccinated or not. The majority 660 (90.3%) and 680(93%) of the parents strongly agreed or agreed that compliance to immunization schedule is important and immunization keep the child healthy respectively.

2.2.10 Role of gender

Although less frequently reported, being a female child was also a reason/factor related to low vaccine. The role of a child's gender was primarily identified from studies/projects conducted in India, Pakistan, Bangladesh, Nigeria, and Turkey.

Poor knowledge and false religious beliefs are important drivers in the way people understand the disease. These factors are very likely to be the source of misconception and potential barriers to behaviours change. Nasir et al (2014) noted that, it would be safe to transfer knowledge from trusted sources like community leaders and religious scholars since they are well informed about immunization in that particular are and could significantly reduce the burden of polio from the affected countries (Nasir et al, 2014).

2.3 Practice of caretakers towards immunization uptake

2.3.1 Sought knowledge about immunization

In an institutional based cross-sectional study on the knowledge, attitude and practice of mothers towards immunization of infants in health centres at Addis Ababa, Ethiopia, Birhanu et al (2016) showed that respondents had good practices towards immunization uptake. Out of the total sample size population, 84.0% of mothers found in Addis Ababa had good practice of infants' immunization. Health education to promote knowledge and attitude based immunization practice is recommended (Birhanu et al, 2016).

2.3.2 Completion of immunization

In a cross sectional survey of nonrandomized sample of 200 mothers were interviewed at primary health care clinic at Al-Beida City coming for vaccination of their children, Mabrouka, (2008) shows that, 81% (n=162) of the mothers completely immunized their children and 19% (n=38) partially immunized them. Seventy-seven percent of studied sample were from urban, while the rest were from rural town thus urban people responded more to immunization than rural people (Mabrouka, 2008).

Regarding child immunization status, Oyefara (2014) in a study on mothers' characteristics and immunization status of under-five children in Ojo Local Government Area, Lagos State, Nigeria, majority of the respondents presented good practice. The findings show that children of about 4 in 5 (85.7%) women were fully immunized. Only 36 (14.3%) women had not fully immunized their children. Some of the reasons given for partial immunizations by the mothers are that the immunization post was too far (37.2%), lack of information on the exercise (20.0%), fear of side effects (17.1%), and the fact that the child was absent during immunization (17.1%) (Oyefara, 2014).

2.3.4 Education levels

Oyefara, (2014) in Ojo Local Government Area, Lagos State, there was poor practice towards immunization uptake among majority of the mothers with higher education levels compared to ones with low levels. Here 38.9% of women without any formal education had fully immunized their children compared with 86.9% of women with secondary education. In addition, 90.9% of women who assessed themselves to be average on wealth assessment compared with 45.3% of the poor had fully immunized their children. On the basis of the study's findings, there is a need for a holistic approach that will involve all social classes and communities on child immunization to have 100% immunization coverage and minimal child morbidity and mortality in all areas of the city (Oyefara, 2014).

2.3.5 Time immunization is started

In a cross sectional study conducted among mothers having one year old child at Mawatch Goth, Kemari town, Karachi, Nisar, Mirza, and Qadri, (2010) noted good practice of immunization uptake. Majority 70% of women started routine immunization of the child. They started immunization early enough because they had had information from the health workers during hospital visits. About 31% of the mothers quit immunization after missing one dose. The reasons for missing vaccination schedule were lack of understanding of next appointment and house work.

2.3.6 Possession of immunization cards

Nisar, et al., (2010) showed that majority of the mothers had fair practice regarding keeping documents about immunization. About 55.5% mothers had vaccination cards with them, 21.5% made cards but lost somewhere, while 23% did not know about cards.

2.3.Place of delivery

Olusanya (2010) in a study on the pattern and determinants of BCG immunization delays in a sub-Saharan African community, there were substantial knowledge gaps regarding the benefits of the practice and poor adherence to recommended vaccine schedules, especially beyond the neonatal period. Timeliness of vaccine uptake has been associated with hospital delivery, a time when the initial vaccines are given, and, in general, vaccination schedule adherence tends to decrease subsequently with later vaccines (Babirye et al, 2012) as was found to be the case in our study. Common sources of vaccination awareness were the hospitals/ clinics or the media (radio and television stations) or community announcements with a Public Address System ((Babirye et al, 2012).

CHAPTER THREE: METHODOLOGY

3.0 Introduction

In this chapter, the description of the research method is given. It includes the study design, study setting, study population, sample size determination, sampling method, definition of study variables, data collection method and tools, quality control for data, data presentation and analysis, ethical issues, limitations of the study, and plan for dissemination of the study results.

3.1 Study design

This was a descriptive cross sectional study that was conducted between June and July 2016. A cross sectional study was chosen because it allows for collection of large volumes of data at one point in time. Also this meant a small portion of the population was selected due to limited financial resources and time to be representative of the entire population since immunization is needed by every infant in the community. This was found suitable for assessing knowledge, attitudes and practices about immunization uptake.

3.2 Sources of data

The study was based on both primary and secondary data.

Primary data; Here information was derived directly from the respondents who were the caretakers of children below 5 years through structured interviews.

Secondary data; This was information from acknowledged studies in relation to the study. These mainly included; on-line journals, electronic books, library books, research dissertations, learning websites, etc.

3.3 Study setting

The study was carried out in five villages of Katikamwe Parish. These included; Kyabugimbi Trading Council, Kyamtiganzi A, Kyamtiganzi B, Kyamtiganzi C, and Kyamtiganzi D. Katikamwe parish is found in Kyabugimbi Sub County which is among the 11 sub counties forming Bushenyi District. The parish constituted of 15 villages that include; Bugarama A, Bugarama B., Kacence, Katikamwe A, Katikamwe B, Kyabugimbi Trading Council, Kyamtiganzi A, Kyamtiganzi B, Kyamtiganzi C, and Kyamtiganzi D, Nyamabare A1, Nyamabare A2, Nyamabare B, Nyamabare C, and Nyamabare D. Bushenyi district had is located approximately 65 kilometres (40 mi), by road, west of Mbarara district and approximately 350 kilometres (220 mi), by road to the east away from the capital city (Kampala). The coordinates of

the town are: 0°32'30.0"S 30°11'16.0"E (Latitude:-0.541667; Longitude: 30.187778). In 2014, the national population census put the population of Bushenyi district was estimated to be 215,671 people. The major economic activity is agriculture largely with animal rearing on local basis.

The study was carried out in the five villages of Katikamwe Parish because Katikamwe Parish had the lowest number non immunized children in the whole county (76%) (Kyabugimbi Health Centre IV Report 2014).

3.4 Study population

3.4.1 Target population

The target population comprised of all parents and guardians who resided in five villages selected from Katikamwe parish as earlier noted. The study population constituted of parents or guardians/ caretakers with children less than 5 years of age. This age group was chosen because most immunization programs by the Ministry of Health always target children under the age of five.

3.4.2 Eligibility criteria

3.4.2.1 Inclusion criteria

The study population included all parents or guardians/caretakers with children less than 5 years of age and resident of Katikamwe parish.

3.4.2.2 Exclusion criteria

Parents or guardians lived in the area for less than a year, unwilling to participate, deaf or dumb, mentally ill or the very ill were excluded from the study.

3.5 Sampling

3.5.1 Sample size determination

The sample size of 195 respondents was used to answer the research questions. It was determined using the Kish and Leslie sample size formula given below, (Kish, and Leslie, 1965) considering the reported prevalence of 15% of caretakers/mothers with low knowledge, practices and attitude regarding childhood immunization in western Uganda (Bbaale, 2013).

$$N = \frac{Z^2PQ}{D^2}$$

Where:

N = The required sample size

Z = The confidence level at 95% (standard value of 1.96)

D = Precision given as +/-0.05

P= Was the estimated percentage of caretakers / mothers with low knowledge, practices and attitude regarding child hood immunization (15%) (Bbaale, 2013).

$$Q = (1-P) = 1-0.15 = 0.85$$

$$N = \frac{1.96 \times 1.96 \times 0.85 \times 0.15}{0.05^2}$$

$$N = \frac{3.841 \times 0.1275}{0.0025}$$

$$N = \frac{0.480125}{0.0025}$$

$$N = 195$$

3.5.2 Sampling Technique

The study used both probability and non probability sampling methods to select respondents. Every parent/ caretaker in the study area had an equal chance of being selected (Creswell, 2012). A random process decided the sample based on each individual's probability. Katikamwe parish had fifteen villages namely; Bugarama A, Bugarama B., Kacence, Katikamwe A, Katikamwe B, Kyabugimbi Trading Council, Kyamtiganzi A, Kyamtiganzi B, Kyamtiganzi C, and Kyamtiganzi D, Nyamabare A1, Nyamabare A2, Nyamabare B, Nyamabare C, and Nyamabare D.

3.5.3 Sampling Procedure

The study adapted probability sampling because the researcher wanted every caretaker in the community to have an equal opportunity as the other to participate in the study. Here the researcher first used stratified sampling to select the five villages from Katikamwe Parish which depended on the immunization uptake information from Katikamwe Parish administrative data base.

Here five villages that include; Kyabugimbi Trading Centre, Kyamtiganzi A, Kyamtiganzi B, Kyamtiganzi C and Kyamtiganzi D were selected basing on their low immunization uptake statistics (less than 75%). This was done because these five selected villages had the lowest rates

of immunization uptake. From each village 39 households were considered where one respondent was selected from each. Kyabugimbi Trading Centre had 142 households, here the one respondent was selected ever after 3 households. Kyamtiganzi A had 90 households; here one respondent was selected after every 2 households, Kyamtiganzi B had 79 households; here one respondent was selected after every 2 households , Kyamtiganzi C had 102 households; here one respondent was selected after every 2 households and Kyamtiganzi D had 107 households; here one respondent was selected after every 2 households. This was done until a sample size of 195 respondents was attained.

The researcher moved home to home with the help of the area local administrator on the Local Council chairperson, secretary for information, and women and child affairs. On reaching the home, the researcher asked whether there is a mother or care taker (an adult) of children below 5 years. If they are available, they will be explained about the purpose of the study and seek their consent to participate in the study. If they consent they were asked to pick a paper from the container and if they pick YES, will be selected for the study.

3.6 Study variables

The independent variables of the study were knowledge and attitudes of caretakers/mothers towards immunization. The dependent variable was practices of caretakers/mothers towards immunization.

3.7 Data collection methods and tools

In this study, quantitative data was collected using questionnaire based interviews. A standardized interview that contained both close ended (structured) and open ended (semi-structured) questions on knowledge, attitudes and practices regarding childhood immunization (refer to appendix II) was used. This was first pre-tested in another similar setting that checked for applicability, accuracy and consistency of collected data before commencement of study. Using both close and open ended questions, new issues that would not otherwise have been captured using structured questions were collected in a semi-structured interview. A 5-point likert scale was used to evaluate respondent's responses on attitudes towards immunization uptake. This scale had 5 scores representing a particular response namely; 1-strongly disagree, 2-disagree, 3-undecided, 4-agree and 5-strongly agree. This scale was chosen because it has been proven useful for evaluating respondent's responses on attitudes (Bowling, 1997; Burns and Grove, 1997).

3.8 Quality control for field data

Quality control measures were put in place to ensure validity and reliability of collected data in the following ways;

- The researcher developed a standardized interview schedule and was pretested in a similar setting which was Beijengye Parish a neighbourhood of Katikamwe Parish before application in Katikamwe Parish. Through this pilot study, redundant questions that were not adding any value to the study were removed. The validity and reliability of the questionnaire was tested using a content validity index (CVI) given by the following formula;

$$\text{CVI} = \frac{\text{No. of questions declared valid}}{\text{total No. of questions in the questionnaire}}$$

- Here on, a minimum of 0.75 of CVI was used to confirm validity (Lawshe, 1975)
- In order to ensure reliability of the instrument, the test-retest method was used. Here the questionnaire was given to 15 people and after one week, the same questionnaire was re-administered to the same people and the Cronbatch Alpha was calculated
- There was translation of interview papers into Runyakitara language which was the local language understood by the majority of the respondents.
- The research assistants were trained by the principle investigator to assist in administration of interview schedules.
- Interview questionnaires were checked for consistence and completeness of information obtained from the study participants so as to ensure reliability of the collected information.
- Before closure, all answered interview papers were double checked for completeness and approved for storage by the principal investigator.
- The interview questionnaires were kept in safety lockers under lock and key and were only be accessible by the principal investigator.

3.9 Data presentation and analysis

Data was cleaned, coded and entered into Microsoft Office Excel version 7. Descriptive statistics and analysis were carried out using the Statistical Package for Social Sciences (SPSS) version 16.0. Descriptive (Univariate) data was presented as frequencies and percentages, and illustrated using frequency tables, pie charts and bar graphs. In order to evaluate responses on attitudes,

mean scores were calculated for each item that was included in the 5-point likert scale. A mean score in the range of 1.0-1.75 was interpreted as a very negative attitude; 1.76-2.5 (negative); 2.51-3.25 (neutral); 3.26-4.00 (positive); 4.01-5.00 (very positive).

The relationship between knowledge, attitudes and practices regarding immunization uptake was analyzed post-hoc using Pearson correlation. Respective correlation coefficients and their P-values were calculated. For all statistical tests, a P-value of less than 0.05 was considered significant.

3.10 Plan for dissemination

Results from the study were presented into a dissertation that was submitted to International Health Sciences University and the local administration of Katikamwe parish. A manuscript will be written for submission to a medical journal and presentation to various conferences.

3.11 Ethical consideration

The study research consent paper was presented to the International Health Sciences University School of Nursing research and Ethics Committee Panel and accepted. Then the researcher was allocated a supervisor with whom she worked until a proposal was produced. On submitting the proposal to the research committee, it was accepted and the researcher was issued with an introductory letter she presented before and the local administration of Katikamwe parish to grant permission to carry out the study. Written informed consent was sought from all study participants before enrolment into study. For all collected data, confidentiality was maintained using participant identifiers. Data was safely stored in a safety box under lock and key only accessible to the study investigators.

3.12 Limitations of the study

Data on knowledge, attitudes and practices regarding childhood immunization was collected by self report. Self reported information may not always be reliable since the researcher cannot confirm but rather report information given by the study respondents. In addition, this survey was conducted in small geographical area in Bushenyi District; therefore the obtained results cannot be generalized to the rest of the Country. Future researches on the topic need to be done that will engage recruitment of participants from different parts of the Country.

CHAPTER FOUR: RESULTS

4.0 Introduction

This chapter presents the findings of the study based on the specific objectives that included; assessing the knowledge of, attitude towards and practices of caretakers regarding immunization uptake in Katikamwe parish.

4.1 Participant demographic characteristics

A total of 216 caretakers were examined to determine their knowledge of, attitude towards and practices regarding childhood immunization uptake. Complete response was achieved in 195 of the 216 caretakers (91%). Majority (83.1%) were female, while only 33 (16.9%) were male.

Table 1: Social demographic characteristics of the study participants (N=195)

Variable	Categories	Frequency	Percentage (%)
Age(years)	18-25	103	52.8
	26-35	62	31.8
	36-45	23	11.8
	46 and above	7	3.6
Religion	Catholic	109	55.9
	Protestant	67	34.3
	Moslem	15	7.1
	Others	4	2.1
Occupation	Students	35	17.9
	Casual employees	23	11.8
	Civil servant	8	4.1
	None	129	66.2
Level of education	Primary	127	65.1
	Secondary	20	10.3
	Tertiary	6	3.1
	None	39	20.0
	Others	3	1.5
Marital status	Single	35	17.9
	Married	132	67.7
	Divorced/separated	19	9.8
	Widowed	9	4.6
Number of children	1	27	13.9
	2-3	66	33.8
	>3	102	52.3

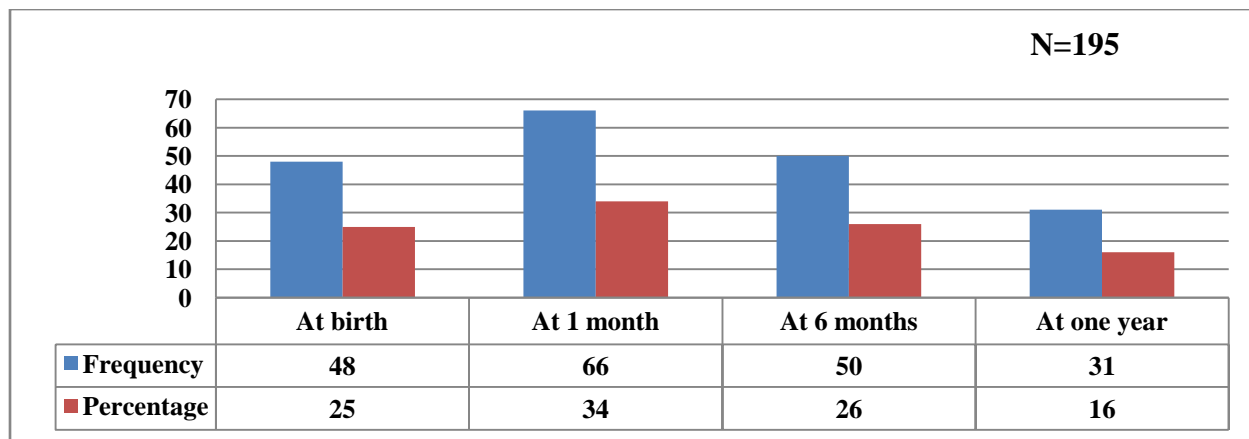
As shown in the table 1 above, majority of the caretakers 103 (52.8%) were in the age range of 18-25 years. Over 129 (66%) did not have any formal employment. The highest level of

education attained by majority was primary, while only 6 (3.1 %) had attained tertiary training. A bigger number were married 132 (67.7 %) with 102 (52.3%) of these having more than three children. Details of the socio demographic characteristics of the study population are given in the table 1.

4.2 Knowledge of caretakers regarding immunization uptake

In this study, majority of the caretakers 175 (90%) of the respondents understood immunization as injecting and administering mouth drops of vaccines to children while 20 (10%) reported that it was smearing children with medicine. As shown in the table 2, the source of information about immunization by many 85 (44%) was health workers, 39 (26%) family members, 51 (20%) friends while only 20 (10%) got this information from non-government organizations (NGOs). Majority of the caretakers 133 (68.2%) knew immunization as a measure of prevention of children from some infectious diseases and their complications, and that routine immunization was good because it boosts immunity or kills germs. In fact, 111 (56.9%) respondents could tell that multiple doses of the same vaccine given at intervals were important for their child's immunity. About the number of times a child should be immunized, majority 92 (47.2%) mentioned three times.

Figure 2: Showing caretakers knowledge of the time a child should get the first vaccine



Although a good number of caretakers could appreciate the importance of immunization, only 73 (37.4%) respondents had knowledge about the immunizable diseases. About half 26 (50.3%) knew that most diseases against which children are immunized occur in first year of life. Thus when asked as to when a child should receive the first dose of vaccine, only 48 (24.6%) named at birth. The remaining 147 (75%) respondents did not know that a child receives their first vaccine at birth as shown in the Figure 2 above.

Only 52 (26.7%) knew that common colds, ear infections and diarrhea were not contraindications for immunization. It was important to note though that a greater number of respondents 151 (77.4%) thought that it was necessary to train them about immunization preferably from health centers. Details of the caretaker's knowledge regarding child hood immunization are given in the table 2.

Table 2: Participant's knowledge about child hood immunization (N=195)

Particulars	Response	Frequency	Percentage (%)
Understanding of immunization	Injecting and mouth drops of vaccines	175	89.7
	Smearing with medicine	20	10.3
Source of information about child immunization	Health workers	85	43.6
	Family members	39	20.0
	Friends	51	26.2
	NGOs	20	10.3
Routine immunization prevents children from some infectious diseases and their complications	Yes	133	68.2
	No	62	31.8
Why routine immunization is good	It boosts immunity	90	46.1
	It kills germs	43	22.1
	Don't know	62	31.8
Multiple doses of the same vaccine given at intervals are important for child's immunity	Yes	111	56.9
	No	84	43.1
Number of times a child should be immunized	1	15	7.7
	2	56	28.7
	3	92	47.2
	4 or more	32	16.4
Knowledge of immunizable diseases	Yes	73	37.4
	No	122	62.6
Whether most diseases against which children are immunized occur in first year of life	Yes	98	50.3
	No	97	49.7

4.3 Caretakers' attitudes towards immunization uptake

Regarding the attitudes towards immunization uptake, majority 85 (43.6%) agreed that immunization keeps a child healthy; 80 (41%) agreed that it wasn't safe to immunize a child once. On whether the vaccines were safe, the overall response was neutral. However, a good number 80 (41%) had the opinion that it wasn't ideal to immunize a sick child. The response on health care seeking was surprising. Many respondents 82 (42.1%) disagreed to the idea of

always visiting a health centre whenever a child falls sick. Notably, majority 90 (46%) disagreed to the view of a child becoming infected after immunization with the disease/s against which he/she is vaccinated. A good number 78 (40%) though believed that immunization is associated with side effects, and that local herbs were better than modern medicine.

On whether it is important to complete the immunization schedule, the overall response was neutral. It was however important to note that many respondents believed that child immunization was neither prohibited by religion 91 (46.7% agreed) nor by culture 87 (agreed by 44.6%).

In general, the overall attitude towards immunization uptake was positive as shown in the table 3.

Table 3: Caretaker's attitudes towards immunization uptake (N=195)

Responses	Frequencies (percentages)					Mean response	Interpretation
	SD	D	U	A	SA		
Immunization keeps a child healthy	12 (6.2)	23(11.8)	25(12.8)	85(43.6)	50(25.6)	3.71	Positive
It is not safe to immunize once	17 (8.7)	28(14.4)	9(4.6)	80(41)	61(31.3)	2.28	Negative
All vaccines are safe	42(21.5)	77(39.5)	15(7.7)	41(21)	20(10.3)	2.59	Neutral
It is not ideal to immunize a sick child	8(4.1)	23(11.8)	18(9.2)	80(41)	66(33.8)	3.89	Positive
It is ideal to always visit a health centre whenever a child falls sick	56(28.7)	82(42.1)	11(5.6)	32(16.4)	14(7.2)	2.31	Negative
A child can become infected after immuniztn with the disease/s against which he/she is vaccinated	44 (23)	90(46)	10(5)	42(22)	14 (7)	2.39	Negative
Immunization is associated with side effects	20(10.3)	39(20)	15(7.7)	78(40)	43(22.1)	3.44	Positive
Local herbs are better than modern medicine	10(5.1)	33(16.9)	16(8.2)	78(40)	58(29.7)	3.72	Positive
Completion of immunization is important	45(23.1)	71(36.4)	12(6.2)	46(23.6)	20(10.3)	2.62	Neutral
Child immunization is not prohibited by religion	8 (4.1)	16(8.2)	10(5.1)	91(46.7)	70(35.9)	4.0205	Very positive
immunization is not prohibited by culture	5 (2.6)	26(13.3)	9 (4.6)	87 44.6)	68(34.9)	3.96	Positive
Overall mean response						3.18	Positive

Participant responses are given as SD = Strongly Disagree, D = Disagree, U=Undecided, A = Agree and SA = Strongly Agree

Number in brackets indicates percentage

In addition, the influence of knowledge on caretaker’s attitudes about child immunization uptake was determined. Study findings showed that, respondents’ knowledge significantly influenced their attitude towards immunization uptake. Knowledge influenced positive attitude to immunization uptake by 89.5%. This implied that, knowledge was a major determinant in developing positive beliefs to ensure immunization uptake. Results indicated a super strong positive and significant relationship between respondents knowledge on immunization uptake and their attitudes regarding immunization uptake ($r=.900, p<0.000$) as shown in the table 4.

Table 4: Correlation between knowledge of the respondents and their attitudes towards immunization uptake

Correlations			
		Understanding	Perception
Understanding	Pearson Correlation	1	.900**
	Sig. (2-tailed)		.000
	N	17	11
Perception	Pearson Correlation	.900**	1
	Sig. (2-tailed)	.000	
	N	11	11

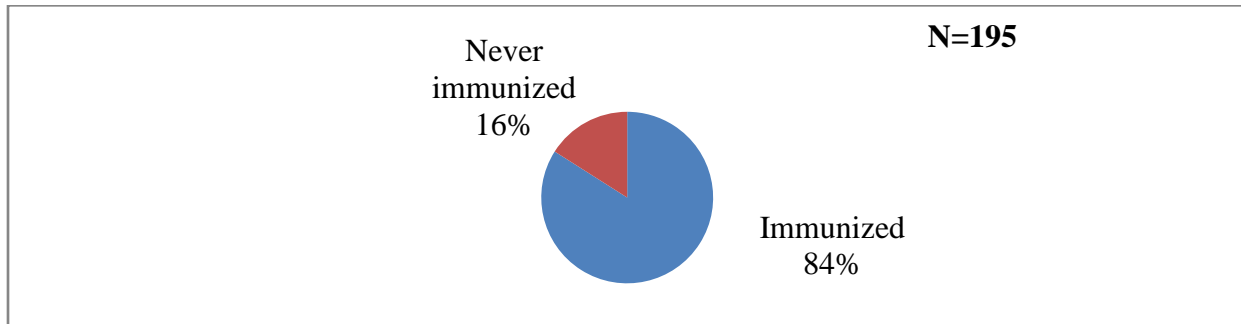
** . Correlation is significant at the 0.01 level (2-tailed).

4.4 Practices of caretaker’s regarding immunization uptake

In this study, 163 caretakers 137 (84%) reported to have ever immunized their children. Only 32 (16%) had never immunized their children as shown in the figure 3. Notably, 102 of the 163 caretakers who had immunized their children 102 (62.6%) did not do it on the exact date indicated for the next immunization schedule. Only 61 (37.4%) reported to have immunized on the exact date as indicated on the immunization schedule as shown in the table 4. Reasons given for immunizing children by many (65%) was that immunization safe guarded their children against disease, 36 (22%) reported it was free of charge and 21(13%) reported that immunization was accessible. Out of the 102 respondents who never immunized on the exact date indicated on

the immunization chart, 62 (61%) did not have time, 28 (27%) did not feel it necessary, while only 12 (12%) did not have access to immunization centers.

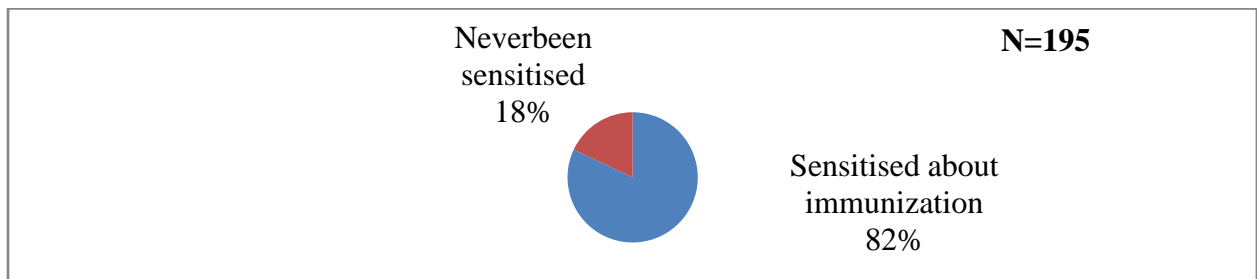
Figure 3: Showing caretakers child immunization uptake



Majority 75 (46%) reported to have immunized their children thrice, 47 (29%) immunized twice, 28 (17%) immunized four times and more while only 11 (7%) immunized once. Concerning the stage at which caretaker's started immunizing their children, 60 (36%) of the respondents reported to have had their children receiving the first vaccine at 6 weeks, 53 (33%) reported six months, 33 (21%) reported at birth while 17 (10%) reported one year. Majority 83 (50.9%) of the respondents immunized from health centers, 50 (30.7%) immunized from community centers while only 30 (18.4%) immunized from homes.

Out of the 163 respondents who immunized their children, majority 117 (72%) never had anywhere their children's immunization was recorded while the minority 46 (28%) had records for their children's immunization. Over 137 (84%) of the respondents immunized sick children while 26 (16%) never immunized their children while sick. Concerning sensitization about child immunization, 159 (81.5%) respondents reported to have ever had training on immunization, while only 36 (18.5%) had never been sensitized about child immunization as shown in the figure 4.

Figure 4: Showing caretakers who were sensitized about immunization



Places where respondents received training about immunization included media (reported by 46% of the respondents), 60 (38%) reported health centers while 25 (16%) indicated community centers. Details of the caretaker's responses regarding child immunization uptake are given in the table 5.

Table 5: Caretaker's responses regarding immunization uptake (N=163)

Particular	Response	Frequency	Percentage
Whether immunization was done according to immunization schedule	Yes	102	62.6
	No	61	37.4
Reason for immunizing child	Immunization safe guards children from disease	106	65
	It is free of charge	36	22
	It is accessible	21	13
Number of times immunization was done	Once	12	7
	Twice	47	29
	Three	76	47
	Four or more	28	17
Age at which respondents started immunizing their children	At birth	33	20.5
	6 weeks	60	36.4
	6 months	53	32.8
	1 year	17	10.3
Place where immunization was done	Health center	83	50.9
	Community center	50	30.7
	home	30	18.4

4.5 Bivariate analysis of social demographic, knowledge and attitude

The significant factors of the factors were measured basing on whether respondents immunized their children against those that never immunized their children. Among the social demographic factors; religion, levels of education, marital status and number of children a caretaker had. Knowledge was measured basing on source of information about immunization, awareness of the immunizable diseases, awareness that routine immunization prevents infections from diseases and awareness about the number of times a child should be immunized. Attitude was measured basing on safety of the vaccines used, immunizing a sick child, efficacy of herbal medicine against modern medicine, completion of immunization schedule and religion. There were 163 respondents who had immunized their children against 32 who had never immunized their children.

Table 6: Bivariate analysis of social demographic, knowledge and attitude

Particulars	Response	HEI	HNI	Freq	P-value
Social demographics					
Religion	Christians	160 (147)	16(29)	176	8.33047E-18 (0.0000)
	Others	3(16)	16(3)	19	
Level of education	Low	95(101)	26(20)	121	0.0166
	High	68(62)	6(12)	74	
Marital	Single	48(53)	15(10)	63	0.0373
	Married	115(110)	17(22)	132	
Number of children	Less 3 children	84(78)	9(15)	93	0.0201
	More than 3	79(85)	23(17)	102	
Knowledge					
Source of information about child immunization	Health workers	77(71)	8(14)	85	0.0193
	Others	86(92)	24(18)	110	
Could mention immunizable diseases	Yes	66(61)	7(12)	73	0.0458
	No	97(102)	25(20)	122	
Routine immunization prevents children from some infectious diseases and their complications	Yes	116(111)	17(22)	133	0.0035
	No	47(52)	15(10)	62	
Number of times a child should be immunized	Less than 4 times	31(27)	1(5)	32	0.0338
	4 times	132(136)	31(27)	163	
Attitude					
All vaccines are safe	Yes	56(51)	5(10)	61	0.0370
	No	107(112)	27(22)	134	
It is ideal to immunize a sick child	Yes	127(122)	19(24)	146	0.0256
	No	36(41)	13(8)	49	
Local herbs are better than modern medicine	Yes	108(134)	28(22)	136	0.0009
	No	55(49)	4(10)	59	
Completion of immunization is important	Yes	61(55)	5(11)	66	0.0145
	No	102(108)	27(21)	129	
Child immunization is not prohibited by religion	Yes	130(135)	31(26)	161	0.0127
	No	33(28)	1(6)	34	
		163	32		

From the table above; significant factors were; among the social demographic factors; religion (P=0.0000), levels of education (P=0.0166), marital status (P=0.0373) and number of children a caretaker had (P=0.0201). Knowledge was measured basing on; source of information about immunization (P=0.0193), awareness of the immunizable diseases (P=0.0458), awareness that routine immunization prevents infections from diseases (P=0.0372) and awareness about the number of times a child should be immunized (P=0.0338). Attitude was measured basing on; perception about the safety of the vaccines used (P=0.0370), mind-set about immunizing a sick

child ($P=0.0256$), perception about the efficacy of herbal medicine against modern medicine ($P=0.0009$), completion of immunization schedule ($P=0.0145$) and whether their religion prohibited immunization ($P=0.0127$).

The influence of knowledge and attitudes on caretaker's practices about child immunization uptake was also determined. Study findings indicated that respondents' knowledge significantly influenced their practices towards immunization uptake. Knowledge influenced positive practices to immunization uptake by 89.4%. This implied that, knowledge was a major determinant in immunization uptake. Results indicated a super strong positive and significant relationship between respondents knowledge and actual immunization uptake ($r=.894$, $p<0.000$) as shown in the table 6.

Table 7: Correlation between knowledge of the respondents and their practices on immunization uptake

Correlations			
		Understanding	Practice
Understanding	Pearson Correlation	1	.894 ^{**}
	Sig. (2-tailed)		.000
	N	17	11
Practice	Pearson Correlation	.894 ^{**}	1
	Sig. (2-tailed)	.000	
	N	11	11
**. Correlation is significant at the 0.01 level (2-tailed).			

Study findings showed that, respondents' attitude significantly influenced their practices towards immunization uptake. Attitude influenced positive practices to immunization uptake by 95.4%. This implied that, attitude was a major determinant for immunization uptake. Results indicated a super strong positive and significant relationship between attitude of the respondents and immunization uptake ($r=.954$, $p<0.000$) as shown in the table 7.

Table 8: Correlation between perception and practices of the respondents towards immunization uptake

Correlations			
		Perception	Practice
Perception	Pearson Correlation	1	.954 ^{**}
	Sig. (2-tailed)		.000
	N	11	11
Practice	Pearson Correlation	.954 ^{**}	1
	Sig. (2-tailed)	.000	
	N	11	11
**. Correlation is significant at the 0.01 level (2-tailed).			

CHAPTER FIVE: DISCUSSION

5.0 Introduction

This chapter gives a comprehensive assessment of the study results according to the study objectives, how the current findings relate to other scholar's findings and impact of the current results on policy evaluation about child immunization uptake.

5.1 Discussion of findings

5.1 Knowledge of caretaker's on immunization uptake

All the respondents had ever heard about immunization and majority (90%) knew that, it was the injecting and or administering drops of vaccines to the child through the mouth. According to the standard guidelines for vaccination (CDC, 2011), immunization is done either by injection or administering drops of vaccine through the mouth. This means that in this study, many caretakers had relatively good knowledge on some aspects concerning immunization. A good number could describe immunization as a measure of prevention of children from some infectious diseases and their complications, and that 1) routine immunization was good because it boosts immunity or kills germs, 2) multiple doses of the same vaccine given at intervals were important for their child's immunity. Sources of information about immunization by majority (44%) were health workers. This could have accounted for the relatively good knowledge caretakers in this study demonstrated about immunization.

Mabrouka, (2011) showed that if mothers get information about immunization from the right sources, they are likely to complete the immunization schedule for their children. In the present study however, we observe that even though majority could correctly define immunization, many care takers were unsure of the number of times the vaccine should be given, at what stage immunization should be began and very few (37%) had knowledge of the immunizable diseases. The implication of this outcome is that immunization would be done out of the scheduled time or may be missed completely and this could predispose children to immunizable diseases leading to spontaneous outbreaks, thus more sensitization about immunization needs to be given. In our setting, a child is supposed to get the first vaccine immediately after delivery (Nankabirwa, et al., 2010), although elsewhere in the US, some vaccinations such as the influenza vaccine are recommended for all children from 6 months up to 19 years – with particular emphasis on children under the age of 5 year or with chronic illnesses (Smith et al, 2009).

Inadequate awareness that most diseases against which children are immunized occur in first year of life as evidenced among 50% of the respondents could have resulted from the fact that a big proportion (63%) of the respondents were unaware of the immunizable diseases. On the contrary, another study by Nisar et al., (2010) in a study carried out in Karachi Pakistan found that mothers had good knowledge about the age at which immunization should be started. Out of the sample population, over 99 % reported at birth and about age at which immunization completed 56% said 9 months, 22% said 2 years and 22% reported 3 months. About 54% of women reported exact number of diseases against which the expanded programme on immunization) (EPI) is scheduled and a good number had relative knowledge on the names of the vaccines that prevented diseases. In their study, over 76% mentioned polio vaccine, 40 % tuberculosis, 20% whooping cough, 39 % tetanus, 19 % diphtheria, 34% measles and 15% were able to name Hepatitis B vaccine. Similarly, Njuma, (2011) in a study carried out in Cameroun found out that, 94% of the participating parents knew the types of vaccines their children had taken, while 6% had no knowledge. The current EPI vaccines which parents most often remembered that their children had taken or were due to take included: BCG, Polio, DTP (diphtheria, tetanus, and pertusis), measles and the yellow fever vaccines. Babirye et al. (2012) found out that, majority of mothers who had delivered outside the health care facility had low knowledge about the vaccines children were supposed to receive and the time they were to receive them.

5.2 Discussion of attitudes of the respondents towards immunization uptake

Regarding the attitudes towards immunization uptake, majority (44%) agreed that immunization keeps a child healthy; 41% agreed that it wasn't safe to immunize a child once. Given that some had ever heard about immunization, they knew that, immunization had to take several doses because it was always indicated on the immunization charts. However, regarding whether the vaccines were safe, the overall response was neutral. Several respondents believed that immunization was associated with side effects. Some respondents thought that their children could get deformities after immunization while others reported cancer. Children who fell sick after immunization were thought to suffer from side effects of immunization which portrayed poor knowledge about immunization. These findings are in line with a study by WHO, (2014) which reported that, in many Sub Saharan Africa countries, there is a general negative attitude towards immunization uptake regarding the safety of the vaccines. There are wide misconceptions or fear of vaccinations ranging from the impression that vaccinations do not

work to the concerns that vaccinations harm the child, or cause disease or other adverse event such as sterility. Such beliefs could have derailed caretakers from immunizing their children because they thought that side effects would be more than the actual effects of suffering from immunizable diseases. Similarly, Yousif, et al., (2013) in study carried out in Saudi Arabia, noted that, nearly 40% of parents were not sure if the child becomes infected after immunization with the disease/s against which he/she was vaccinated or not.

It was important to note though majority (83%) of the respondents agreed that child immunization was not prohibited in their religion. Religion has a strong influence on society and has a role to play in influencing decisions that are important for implementation of community programs such as immunization. The report that religion did not discourage people from immunizing their children in the present study is a good indicator of the positive attitude demonstrated by clergies towards immunization, which is highly commended. Similarly, Yousif, et al., (2013) in a study on parents' knowledge and attitudes on childhood immunization in Taif, Saudi Arabia noted that, 83% and 57% parents respectively strongly agreed or agreed that child immunization is not prohibited in religion and the administration of vaccines is associated with side effects respectively. Poor knowledge and false religious beliefs are important drivers in the way people understand the disease. These factors are very likely to be the source of misconception and potential barriers to behaviors change (Nasir, et al., 2014). In the present study, neither religion nor culture was reported to prohibit caretakers from immunization up take. These findings highlight the need of involving religious and cultural leaders in mass sensitization of communities about immunization. Despite the fact that 69% of the respondents believed that immunization kept a child healthy, over 60% who did not believe that completion of immunization schedule was important. This explains why majority of the respondents immunized their children only three times yet they were supposed to immunize four times and more. The implication of missed vaccinations is the likelihood of predisposing children to immunizable diseases such as measles and whooping cough that are very prevalent in our study setting. On the contrary, another study by Yousif, et al., (2013) found out that, 90% and 93% of the parents respectively strongly agreed or agreed that compliance to immunization schedule is important and immunization keep the child healthy respectively. This means that they had high knowledge about the importance of immunization.

The response on health care seeking was surprising. Many respondents (42%) disagreed to the idea of always visiting a health centre whenever a child falls sick. This indicated a poor care seeking behavior which was manifested in low immunization uptake by many respondents which highly predisposed children to immunizable diseases. On the contrary, Bernsen, et al, (2011) revealed that, majority of the fathers of immunizable children knew the reason about child immunization. Majority (86.6%) said that vaccination is necessary. They also had a good health seeking behavior where they reported any sickness their children had.

Also in our study, majority of the caretakers (70%) believed that local herbs were better than modern medicine. This was a wrong perception because herbal medicine is not scientifically proven to prevent immunizable diseases.

It is important to note that respondents' knowledge significantly influenced their attitude towards immunization uptake in the present study. Our results show that knowledge influenced positive attitude towards immunization uptake by 89.5%, implying that knowledge was a major determinant in developing positive beliefs to ensure immunization uptake. Thus programs aimed at promoting health education to improve knowledge and attitude based immunization practice are recommended.

5.3 Discussion of practices of the caretakers on immunization uptake

Out of 195 respondents, 163 (83.6%) reported to have ever immunized their children. The uptake of immunization by many caretakers could be because several respondents (68%) knew that immunization safe guarded their children against diseases. Similarly, in a study carried out in Ethiopia, Kibie and Jejaw, (2016) showed that respondents had good practices towards immunization uptake. Out of the total sample size population, 84% of mothers found in Addis Ababa had good practice of infants' immunization. It is evident here that knowledge about immunization was a key determinant in the uptake of immunization by majority of the caretakers.

Even though there was a high uptake of immunization services, we observe that some caretakers (37%) were not adhering to the immunization schedule and only very few (17%) reported to have immunized their children four or more times. We note in the present study that over 60% of the caretakers did not believe that completion of immunization schedule was important. This may explain why majority of the respondents immunized their children only three times yet they

were supposed to immunize four times and more. As earlier indicated, the implication of missed vaccinations is the likelihood of predisposing children to immunizable diseases such as measles and whooping cough that are very prevalent in our study setting. We also observe a poor health care seeking behavior which could partially explain the reported missed or incomplete immunization uptake by caretakers in the present study. A different study carried out in a primary health care clinic at Al-Beida City shows that, 81% of the mothers completely immunized their children and while only 19% partially immunized them. The feature seen in this study and which could probably explain why many mothers completed the immunization schedule is that majority of the respondents (77%) were from from an urban setting where access to health care services and information are easy. (Mabrouka, 2008). The present study was carried out in Katikamwe Trading centre, where there was Katikamwe Health Centre IV where care takers could easily get information regarding immunization and other services. Reasons for non adherence to the immunization schedule despite having health services in reach need to be investigated.

Immunization was not initiated at birth by 21% of the study participants. Some caretakers, children (36%) received their first vaccine at 6 weeks. This could have resulted from low health facility based deliveries which denied the children chance to get the first vaccine doze immediately after birth, as evidenced by the poor health care seeking behavior. Another study in Karachi, India by Nisar et al., (2010) noted good practice about immunization uptake. Majority (70%) of women started routine immunization of the child early enough because they had heard information from the health workers during hospital visits. Only 31% of the mothers quit immunization after missing one dose due to several reasons that included lack of understanding of next appointment and house work. In the present study, 82% of the caretakers reported to have been sensitized about immunization and thus would be expected to adhere to the routine immunization schedules. Reasons for missed immunizations even with reported sensitization on immunization uptake in this study setting need to be further investigated.

It is important to note though that at least 50% the respondents immunized their children from health centers. However, most respondents never had anywhere their children's immunization was recorded as evidenced from 72% of the respondents. There was poor storage of the cards which could have resulted from the poor housing conditions and the fact the majority had low levels of education and thus never attached high importance to keeping documents or some could

have deceived the researcher because they could have felt stigmatized if they had said the truth that they did not immunize their children. Many respondents demonstrated inadequate knowledge on the importance of timely immunization and completion of the immunization schedule. As such, immunization cards were lost making immunization follow up difficult. This could have resulted to prevalence of immunizable diseases in the area which could have created mind-set that children could still be infected with the diseases they were immunized against. On the contrary, Nisar, et al., (2010) in a study carried out in Nigeria, showed that majority of the mothers had fair practice regarding keeping documents about immunization. At least 56% of the mothers had vaccination cards with them, 22% made cards but lost somewhere, while 23% did not know about cards. In the present study, respondents should always keep their immunization cards so that they may easily follow up the immunization schedule.

5.4 Discussion of Bivariate analysis

Findings showed that among the social demographic characteristics of the respondents significant factors were; religion ($P=0.0000$). Majority 176 (90.2%) were Christians where most 160(90.9%) had ever immunized their children. Ideally Christianity is always positive to modern health care which could have led to a positive attitude among respondents towards child immunization. Also in nursing profession, religion is not among interfering factor to health care. Policy-wise immunization does not consider ones religion because infections do not attack people basing on that. Similarly, Yousif et al (2013) in a study done in Taif, Saudi Arabia noted that, out of parents 606 (82.9%) and 415 (56.8%) parents strongly agreed or agreed that child immunization is not prohibited by their religion and the administration of vaccines is associated with side effects respectively. However, nearly forty percent of parents were not sure if the child becomes infected after immunization with the disease/s against which he/she was vaccinated or not.

Also respondents' levels of education was a significant factor ($P=0.0166$). Higher immunization uptake was among highly educated respondents where 68(91.9%) had immunized their children compared to 95(75.2%) of respondents with low levels of education. It could be that respondents with higher levels of education could easily internalize information about immunization and thus develop a positive attitude and practice towards it. In nursing practice education and sensitization to mothers about immunization immediately after delivery is the best time for mothers to know about child immunization because it starts right away. All government institutions in reproductive health encourage mothers to immunize their children and follow up until

completion. Also there is a 'Child Days Plus' program meant to carry out routine immunization of the children in gathering centres nearer to the people. All these efforts are meant to increase immunization uptake but weaknesses are that no penalties have been levied against caretakers who refuse to immunize their children. On the contrary, Oyefara, (2014) in a study carried out in Ojo Local Government Area, Lagos State of Nigeria reported poor practice towards immunization uptake among majority of the mothers with higher education levels compared to ones with low levels. Here 38.9% of women without any formal education had fully immunized their children compared with 86.9% of women with secondary education. In addition, 90.9% of women who assessed themselves to be average on wealth assessment compared with 45.3% of the poor had fully immunized their children.

Marital status was also among the major factors ($P=0.0373$). It was found out that non immunization was more among married respondents 17(53.1%) compared to 15(46.9%) among singles. This could have resulted from the fact that such caretakers never save enough time to attend to immunization of their children. It was however observed that overall immunization uptake in regard to marital status married respondents had higher uptake at 115(87.1%) compared to 48(76.2%) who were singles. This could be due to sensitization after delivery. In nursing profession, married people are expected to give support to each other towards better health of the family. However, most nurses have not put enough emphasis on both parental involvement in child health care which leads to loopholes in immunization programs. Some married women are even at time barred by their husbands from immunizing children because they have to move in their company yet most of the males are not at home most of the time. Policy-wise the government encourages couples to help each other in ensuring good health but some males have not responded positive. Oyefara, (2014) in Ojo Local Government Area, Lagos State. Here 38.9% of women without any formal education had fully immunized their children compared with 86.9% of women with secondary education. In addition, 90.9% of women who assessed themselves to be average on wealth assessment compared with 45.3% of the poor had fully immunized their children.

Number of children a caretaker had was significant and highly influence immunization uptake ($P=0.0201$). Respondents with fewer children found it easier to take up immunization compared to their counterpart with many children. There were 84(90.3%) of respondents with less than 3 children who immunized their children compared to 79(77.4%) who had more than three children. It could be take respondents with fewer children had less domestic chores thus could

save time to take their children for immunization. In nursing profession, most mothers who have fewer have higher response to immunization because immunization information is fresh in their minds and have fewer commitments. Policy-wise a smaller family is easier to manage than a large family.

Knowledge was measured basing on; source of information about immunization ($P=0.0193$). It was found out that majority of respondents who got information about immunization from health workers 77(90.6%) had a better immunization uptake compared to respondents who knew about immunization from other sources. This implied that they had the right information about immunization. Literally health workers are the best and most reliable source of information about immunization thus their word is taken seriously since they know the fact about the different infection children suffer from. The government recommends health care providers as the basic and best source of information about health care because they are trained for that.

It was however found out that majority of the respondents could not mention the immunizable diseases despite awareness of the immunizable diseases being a significant factor ($P=0.0458$). findings showed that 25(78%) of the respondents who could not mention immunizable diseases did not immunize their children and 66(90.4%) of respondents who immunized their children knew the immunizable diseases compared to 97(72.9%) who did not know the immunizable diseases. Ideally nurses educate mothers of the types, signs and symptoms of immunizable diseases to mothers especially after delivery so that when their children fall sick they do not mistake them for other infection. However, in public health care facilities, due to much workload, health workers fail to educate mothers which make them remain ignorant of them. On the other hand the government endovours to educate the public especially over the media about immunizable diseases but majority of the people do not access this information due to poor infrastructural development in most of the remote areas such where this present study was carried out.

Awareness that routine immunization prevents infections among children was also a factor put under consideration in study findings ($P=0.0372$). It was established that, majority 116(87%) of the caretakers knew that routine immunization prevents infections among children and immunized their children. Also 17(53.1%) of caretaker who never immunized their children were unaware that routine immunization is good. These could have absconded immunization session that were outside or not on the immunization card in case they had any. In nursing profession it

is always a role of the health worker to inform caretakers of the need to always respond to child spontaneous immunization because there are always diseases outbreaks which many even affect children immunized on schedule as indicated on the immunization card. The government always endeavors to carry out routine immunization despite some people hiding away their children in face of the safety of the vaccines used and the side effects of immunization. This could be due to weaknesses in government immunization policy that doesn't penalize caretakers who refuse to immunize their children.

Awareness about the number of times a child should be immunized was measured at ($P=0.0338$). Majority of the respondents 156(95.7%) knew that right number of times a child should be immunized. They rightly mentioned four times and more and few 7 (21.9%) never immunized their children. This could have been acquired after training.

Attitude was measured basing on; perception about the safety of the vaccines used ($P=0.0370$). Majority 134(68.7%) believed that vaccines were unsafe where 27(84.4%) never immunized their children because they feared their children to develop side effects such as cancer. Clinically vaccines are tested and proven safe for human health as they boost immunity thus rendering bodies resistant to diseases. The government ensures the safety of its citizens through offering quality products to its citizens of which immunization vaccines are a case in point. Its however observed that the government lacks enough preservation equipments to such vaccines to ensure quality to all users. Similarly, Asiimwe et al (2006) noted that in Uganda parents/caretakers perceived vaccines used during mass immunization not to be safe either because they are expired or are deliberately contaminated with harmful agents intended to harm their children (Asiimwe, et al, 2006).

Mind-set about immunizing a sick child was also a factor considered about the attitude of the caretakers about immunization ($P=0.0256$). Majority 146(74.9%) believed that it was good to immunize a sick child where 127(87%) immunized their children. This could have resulted from the fact that, some children were immunized when they were sick which developed confidence among caretakers. On the contrary, Mabrouka, (2011) revealed that, majority of the mothers had negative attitude towards immunizing a sick child. Majority 54% never immunized their children due to their health and sickness was the most common cause for cessation of immunization, followed by non availability of the vaccine, social reasons and forgetfulness (20.%, 10,5% and

5.5%) respectively. Only 10% of the mothers failed to report a reason for not immunizing their children.

Perception about the efficacy of herbal medicine against modern medicine ($P=0.0009$) was another yardstick for attitude of caretakers towards immunization. Majority 108(79.4%) wrongly believed that that local herbs were better than modern medicine which could have led to their low uptake of immunization. This is because 28(87.5%) of such respondents never immunized their children. Nurses face a hard time to convince caretaker to do away with herbal medicine in favour of modern medicine due to misconceptions. Also the policy about drug use in Uganda is not clear about the use of herbal medicine where most of its seller have been give much platform especially over the media with less censorship.

Completion of immunization schedule also influenced immunization uptake ($P=0.0145$). Majority 129(66.1%) of the respondents never completed immunization schedule and out of 32 respondents who never immunized their children 27(84.4%) never immunized their children. This was because they never felt it important to immunize their children. Similarly, in a cross sectional survey of nonrandomized sample of 200 mothers were interviewed at primary health care clinic at Al-Beida City coming for vaccination of their children, Mabrouka, (2008) shows that, 81% ($n=162$) of the mothers completely immunized their children and 19% ($n=38$) partially immunized them.

Religion also influenced immunization uptake ($P=0.0127$). Majority 161(82.6%) reported that their religion did not prohibit immunization where 150(93.2%) immunized their children. This was because most of the respondents were Christians and Christianity doesn't prohibit anybody to seek modern health care.

CHAPTER SIX: CONCLUSIONS AND RECOMMENDATIONS

6.0 Introduction

This chapter presents the summary of general findings of the study and suggested solutions to the problems found that hindered immunization uptake in regard to the study objectives.

6.1 Conclusion

The study assessed the knowledge, attitude and practices of caretakers towards immunization uptake in Katikamwe parish, Kyabugimbi trading center and Kyamutiganzi Villages, Bushenyi District.

Regarding knowledge on immunization uptake, all respondents had ever heard about immunization and could correctly define it. Majority (44%) got information from health workers and thought training about immunization was necessary, knew that routine immunization prevented children from some infectious diseases and its complications and knew immunization boosted a child's immunity that helped to fight against diseases (68%). A good number were aware that multi-doses of the same vaccine given at intervals are important for child's immunity. However there was inadequate knowledge about the right number of times a child should be immunized and when to receive the first vaccine, did not know that lack of immunization could cause serious sickness to children and were unaware of the immunizable diseases. This indicated poor knowledge about immunization

Regarding the attitudes towards immunization uptake, several had a general poor attitude since they believed it was not ideal to always visit a health centre whenever a child falls sick, though not all vaccines perceived safe, associated immunization with side effects, believed that a child can become infected after immunization with the disease/s against which he/she was vaccinated, did not believe that completion of immunization schedule was important and believed that local herbs were better than modern medicine.

The practices towards immunization uptake were generally poor as; several did not immunize on the exact date indicated for the next immunization schedule, started immunization late, never had immunization records, never immunized sick children and did not complete immunization despite getting information over the media. This provided ground for high prevalence of immunizable diseases in the area.

6.2 Recommendations

The recommendations arising from this study are: The study has revealed general lack of knowledge; this study recommends active sensitization of the mothers and other caretakers

6.2.1 Ministry of Health

- They should enhance education and sensitization to the general population about the importance of immunization, completion of immunization and the safety of the vaccines used. This would subjugate the myths about the side effects of immunization among the general population.
- Immunization activities should be funded in time so caretakers can access them from wherever they may be.
- Government should provide information on the facts about immunization, for instance, about the right number of times a child should be immunized and when to receive the first vaccine, safety of vaccines, and when to immunize. This can be done through the different media channels such as radios and newspapers.
- They should carry out door-to-door immunization campaigns especially during immunizable disease outbreaks. This would minimize the infection rate.

6.2.2 Health workers

- They should carry out community outreaches, to educate, sensitize and find more about the knowledge and attitudes of care takers about immunization from their places of residence. Information collected would be relied upon to devise measures of assessing the level of immunization uptake and subsequent increase in numbers.
- Mothers who deliver from health care facilities should be used as ambassadors in their communities about spreading the need for immunization to their fellow mothers who deliver from homes. Also during antenatal visits mothers should be reminded about immunization.
- Health workers should educate mothers about immunizable diseases and emphasize the importance of immunizing children even if they are sick.

- They should emphasize education talks against any negative perceptions against immunization by the mothers. Some of them include; safety of vaccines, infections by diseases immunized against among other side effects.
- They should continuously remind the caretakers about the importance of regular seeking health care.
- They should always remind the mothers about the importance of maintaining the immunization records. This will even help the health worker to assess the children well when they are infected with other diseases apart from immunizable diseases.

6.2.3 Mothers/ caretakers

- They should take immunizable diseases seriously and should know that immunizable diseases can cause serious sickness to children
- They should endeavor to ask health workers about the signs and symptoms of immunizable diseases. This will help them to identify them if their children get infected and then do not misconceive them for other diseases.
- Caretakers should develop a positive towards health care seeking because this will provide them with chance to be educated about immunization.
- They should know that a child can never be infected with the diseases she/he was immunized against if the right immunization schedule is followed. With this information caretaker will be attracted to immunize their children.
- They should always adhere and ensure completion of the immunization schedule of their children so that they gain high immunity. This will help to minimize the rate of infection and thus reduced medical. They should always keep records of where their children's immunization was recorded so that there is easy follow up.
- They should keep the immunization records safely so that they act as reminders for the next immunization schedule.

6.2.4 Community members

- They should report all caretakers who do not immunize children due to different myths
- They should disseminate information about immunization to their neighbor who may not be aware of the importance of immunization or where and when to immunize their children

6.3 Study limitation

This survey was conducted in small geographical area in Bushenyi District; therefore the obtained results cannot be generalized to the parents in all the country. Future researches on the topic need to be done that will engage recruitment of parents from different areas in the country.

6.4 Areas of further research

Similar studies need to be done in the whole district involving more villages to generate more supportive evidence to establish the universal level of knowledge about, attitude for and practices towards immunization uptake. Results from the present study thus highlight the need to further sensitize our communities about immunization.

REFERENCES

- Abdullahi, LA., Kagina, BM., Casidy, T., Adebayo, EF., Wiysonge, CS. and Hussey, GD. (2014) *Knowledge, attitudes and practices on adolescent vaccination among parents, teachers and adolescents in Africa: a systematic review protocol. Syst Rev*, 3: 100
- Asim, M., Malik, N., Yousaf, H., Gillani, I. and Habib, N. (2012) *An Assessment of parental knowledge, belief and attitude toward childhood immunization among minorities in rural areas of District Faisalabad, Pakistan. Mediterranean Journal of Social Sciences*, 3: 153-159.
- Bbaale, E. (2013) *Factors Influencing Childhood Immunization in Uganda. J Health Popul Nutr*, 31(1): 118–129.
- Bernsen, RM., Al-Zahmi, FR., Al-Ali, NA., Hamoudi, RO. and Ali, NA. (2011) *Knowledge, attitude and practice towards immunizations among mothers in a traditional city in the United Arab Emirates. Journal of Medical Sciences*. 4: 114-121.
- Birhanu, S., Anteneh, A., Kibie, Y. and Jejaw, A. (2016) *Knowledge, Attitude and Practice of Mothers Towards Immunization of Infants in Health Centres at Addis Ababa, Ethiopia, American Journal of Health Research*. 4(1), 6-17.
- Bowling, A. (1997) *Research Methods in Health*, Buckingham, Open University Press.
- Burns, N. and Grove, S.K. (1997) *The practice of Nursing Research conduct Critique and Utilization*, Philadelphia, by WB Saunders and Co.
- Center for Disease Control and Prevention, (2011) *Children, the flu and flu vaccine. New York, United states of America*, WHO.
- Hadler, S.C., Dietz, V., Okwo-Bele, JM. and Cutts, FT. (2008) *Immunization in developing countries*, S. Plotkin, W. Orenstein, P. Offit (Eds.), *Vaccines* (5th ed.), Saunders, Philadelphia, 1541–1572
- Hu, Y., Luo, S., Lou, L., Zhang, B. and Li, Q. (2016) *Knowledge, Attitude and Practice on Immunization among Migrant Mothers: A Questionnaire Development and Field Application. Int J Vaccine Immunization*, 2(1).

Kish and Leslie, (1965) *Survey Sampling*. New York: John Wiley and Sons, Inc. p. 78-94

Mabrouka, AMB. (2011) *Attitude and practices of mothers regarding immunization of infants and preschool children at Al-Beida City, Libya, Egypt J Pediatr Allergy Immunol*; 9(1):29-34.

Mizan, S. (2007) *Knowledge, perception and beliefs about childhood immunization and attitude towards uptake of Poliomyelitis Immunization in Northern Nigeria*. Bayero University Kano; Ahmadu Bello University Zaria; National Programme on Immunization.

Nankabirwa, V., Tulleskär, T., Tumwine, JK. and Sommerfelt, H. (2010) *Maternal education is associated with vaccination status of infants less than 6months in Eastern Uganda Promise-ebf Study Group.: a cohort study. BMC Pediatr*. 2010; 10(15):92.

Nisar, N., Mirza, M. and Qadri, MH. (2010) *Knowledge, Attitude and Practices of mothers regarding immunization of one year old child at Mawatch Goth, Kemari Town, Karachi. Pak J Med Sci*; 26(1):183-186

Njuma LJ. (2011) *Introducing the pneumococcal conjugate vaccine (PCV) into Cameroon's Expanded Programme on Immunization: Would every child be reached?* Tampere University Press.

Njuma, LJ., Kobela, M., Ollgren, J., Emah, I., Tchio, R. and Nohynek, H. (2014) *Predictors to parental knowledge about childhood immunisation/EPI vaccines in two health districts in Cameroon prior to the introduction of 13-valent Pneumococcal Conjugate Vaccines (PCV-13)*,The Pan African Medical Journal; 17: 187.

Nnenna, TB., Davidson, UN. and Babatunde, OI. (2013) *Mothers' Knowledge and Perception of Adverse Events Following Immunization in Enugu, South-East, Nigeria. J Vaccines Vaccin* 4: 202.

Oyefara, JL. (2014) *Mothers' Characteristics and Immunization Status of Under-Five Children in Ojo Local Government Area, Lagos State, Nigeria*,

Papazoglou, A., Giamaïou, K., Pouloupoulou, S., Pavlopoulou, I. and Tsoumakas, K. (2013) *The National Vaccination Programme in Greece: Factors Affecting Parents' Knowledge. Global Journal of Medical Research Interdisciplinary*. 13.

Rogalska, J., Augustynowicz, E., Gzyl, A. and Stefanoff, P. (2010) *Parental attitudes towards childhood immunizations in Poland. Przegl Epidemiol* 64: 91-97.

Smith, MJ., Woods, CR. and Marshall, GS. (2009) *Parental vaccine concerns in Kentucky; J Ky Med Assoc* 107: 342-349.

The World Bank, (2016) "Life expectancy at birth, total (years)".

The World Bank, (2016) “*Mortality rate, under-5 (per 1,000)*”..

The World Bank, (2016) “*Health expectancy, total (% of GDP)*”.

Uganda . Bureau of Statistics, (2007) *Uganda Demographic and Health Survey 2006*. Calverton, MD: Macro International; 467.

WHO, (2015). *10 facts on immunization*, Geneva, Switzerland, WHO.

World Health Organization. (2009) *State of world's vaccines and immunization*. 3rd ed. Geneva: World Health Organization; 1–169.

Yousif, MA., Albarraq, AA., Abdallah, MAA., Elbur, AI. (2013) *Parents' Knowledge and Attitudes on Childhood Immunization, Taif, Saudi Arabia. J Vaccines Vaccin* 5: 215.

Zagminas, K., Surkiene, G., Urbanovic, N., and Stukas, R. (2007) *Parental attitudes towards children's vaccination. Medicina (Kaunas)* 43: 161-169.

APPENDIX I: CONSENT FORM

Title of the study.....

Name of Investigator.....

Phone numbers.....

I understand that I am agreeing to participate in a research project that the purpose of the study is to identify.....

I will be asked a series of interview questions and the investigator will record my answers. My name will not be used and the confidentiality of my responses will be protected. The entire produce will take 10-15 minutes. My participation will take place in a private area with only the researcher present. I can decline to answer any question.

Risks

The interview is entirely voluntary and does not entail any foreseeable risks. I understand that I may quit at any time. All data will be maintained in a locked file by investigator for one year and then shredded. Benefits of participation may include a contribution to scholarly research that identifies issues of..... There will be no direct benefits to the subjects.

Participation

I understand that my participation in this study is voluntary and that I may withdraw from the study at any time. My refusal to participate will involve no penalty or loss of benefits to which I am otherwise entitled. I will understand that I will not be compensated for my participation. An offer has been to answer all of my questions and concerns about the study. I will be given a copy of the dated and signed consent form to keep.

Signed **Date**.....

Investigator **Date**.....

APPENDIX II: INTERVIEW SCHEDULE

Dear respondent, am **Tumuhairwe Dativah** a student of International Health Sciences University pursuing a bachelor's degree in Nursing. As a requirement for the course a research study is supposed to be carried out to fulfill the course. You are invited to participate in the study entitled **Knowledge, Attitude and Practice of caretakers towards uptake of immunization in Katikamwe Parish, Bushenyi District**. The information you provide will be confidential and strictly used for research purposes only. Your time and cooperation will be highly appreciated.

INSTRUCTION: Tick the most appropriate response and write in the spaces provided

SECTION A: BACKGROUND INFORMATION

1. Your sex

a) Male

b) Female

2. How old are you?

a) 18-25 years

b) 26-36 years

c) 37-45 years

d) 46 years and above

3. How many children do you have?

a) 1

b) 2-3

c) More than 3

4. What is your religion?

a) Orthodox Christian

b) Muslim

c) Protestant

d) Catholic

e) Others (specify)

5. What is your current marital status?

a) Married

b) Unmarried

c) Separated

d) Divorced

e) Widowed

f) Others, (specify)

6. What is your occupation?

a) House wife

b) Civil servant

c) Casual employee

d) Student

e) Unemployed f) others, (specify).....

7. What is your level of education?

a) No formal education b) Primary

c) Secondary d) Tertiary education

e) Others, (specify)

8. Where do you stay (urban or rural)?

a) Urban b) Rural

SECTION B

KNOWLEDGE OF CARETAKERS TOWARDS UPTAKE OF IMMUNIZATION

1. i) Have you ever heard of immunization?

a) Yes b) No

ii) If yes what is immunization?

.....
.....
.....

2. If yes above, from whom did you get that information?

a) Family member b) Health worker

c) Friend d) Non-Governmental Organization

3. i) Have you ever immunized your child?

a) Yes b) No

ii) Give reasons for your answer?

.....
.....

4. Do you know the immunizable diseases?

a) Yes b) No

ii) If yes, mention them?

.....
.....
.....

5. Do you think that your child's sickness is related to lack or inadequate immunization?

a) Yes b) No

6. When should a child get the first vaccine?

- a) At birth
- b) At 6 weeks
- c) At 6 months
- d) At one year

7. Do you think it is necessary to have training about immunization?

- a) Yes
- b) No

ii) If yes, what is the best place to be trained from about immunization?

.....
.....

8. i) Does routine immunization prevent children from some infectious diseases and its complications?

- a) Yes
- b) No

ii) Give reasons for your answer

.....
.....

9. Do you know that most diseases against which children are vaccinated occur during the first year of life?

- a) Yes
- b) No

10. Do you know that multi-doses of the same vaccine given at intervals are important for child immunity?

- a) Yes
- b) No

11. And that more than one vaccine at the same time have no negative impact on child's immunity?

- a) Yes
- b) No

12. i) Is it important to vaccinate children during immunization campaigns?

- a) Yes
- b) No

ii) Give reasons to support your answer

.....

13. i) Do you know that common colds, ear infections and diarrhea are not contraindications for immunization?

a) Yes

b) No

ii) Give reasons for your answer

.....

SECTION C:

ATTITUDES OF CARETAKERS TOWARDS UPTAKE OF IMMUNIZATION

INSTRUCTION:1- Strongly disagree, 2-disagree, 3-Undecided, 4-agree, 5-strongly agree

No.	Question	SD	D	U	A	SA
1	Child immunization is prohibited in my religion					
2	Is it ideal to immunize a sick child					
3	Child immunization is prohibited in my culture					
4	It is safe to immunize a child once					
5	It is ideal to always visit a health centre whenever a child falls sick					
6	All vaccines are safe					
7	Completion of immunization schedule is important					
8	A child can become infected after immunization with the disease/s against which he/she was vaccinated					
9	Child immunization is associated with side effects					
10	Immunization keeps a child healthy					
11	Local herbs are better than modern medicine					

SECTION D

PRACTICES OF MOTHERS TOWARDS IMMUNISATION

1. i) Have you ever immunized your child?

a) Yes b) No

2. If yes above, how many times should a child be immunized?

a) Once b) Twice

c) Three times d) Four times and more

3. i) Have you ever had training about immunization?

a) Yes b) No

ii) If yes where?

a) At the health centre

b) Village community centre

c) At the worshipping centre

d) At home

ii) If yes what did they teach about immunization?

.....
.....\

4. At what age do your children start immunization?

.....

5. From where do you usually take your children for immunization?

a) Health centre b) community outreach

6. At what age did your child/children receive the measles vaccine?

.....

7. i) Do you have any card where the child/children's immunizations were recorded?

a) Yes b) No

ii) If yes what type of a card

a) Childs health card b) Mothers passport

APPENDIX III: MAP SHOWING THE LOCATION OF THE STUDY AREA



APPENDIX IV: INTRODUCTORY LETTER



making a difference in health care

Office of the Dean, School of Nursing

Kampala, 31st May 2016

To THE CHAIR PERSON LC II
KATIKAMWE PARISH
KYABUKUMBI SUB COUNTY
BUSHENYI



Confirmed by
Purindwa Frans

Dear Sir/Madam,

RE: ASSISTANCE FOR RESEARCH

Greetings from International Health Sciences University.

This is to introduce to you **Tumuhairwe Dativah**, Reg. No. **2013-BNS-TU-010** who is a student of our University. As part of the requirements for the award of a Bachelors degree in Nursing of our University, the student is required to carry out research in partial fulfillment of her award.

Her topic of research is: **Knowledge, attitudes and practices of caretakers towards childhood immunization in Katikamwe Village, Bushenyi District**

This therefore is to kindly request you to render the student assistance as may be necessary for her research.

I, and indeed the entire University are grateful in advance for all assistance that will be accorded to our student.

Sincerely Yours,



The International Health Sciences University
P.O. Box 7782 Kampala – Uganda
(+256) 0312 307400 email: aagwang@ihsu.ac.ug
web: www.ihsu.ac.ug

APPENDIX V: CORRESPONDENCE LETTER

KATIKAMWE PARISH
KYABUGIMBI S/C.
BUSHENYI DISTRICT.
17-06-2016.



To whom it may concern.
TUMUHAIWE DATIVAH.

This is to Acknowledge having received
Ms's Tumuhaiwe Dativah in Katikamwe
Parish who wants to carry her research
from the village of Katikamwe parish in
Kyabugimbi Trading centre, Kyabugimbi
A, B, C, D. She is allowed to go on and
collect DATA.

I'm Mwirindwa ~~for~~ Frank

aman hc II

0700230400.

